NATIONAL PETROLEUM NEWS

"Seven-Six" Threatens Unless Operators Join to Restrict Drilling

By John Power
N. P. N. STAFF WRITER

TULSA, May 5

ONCE again the attention of the oil industry is turned toward Seminole.

Instead of what appeared to be the dying stuggles of this giant field in Oklahoma, the recent activity along the southern edge of the Little River area has given the territory a new lease on life.

At a meeting called for May 10, operators in the entire Little River pool will vote on shutting in the entire field to 100 barrels per well per day for from 30 to 90 days.

In the event such drastic action is not unanimously approved, the present shutdown agreement is to be extended for 30 days, provided the Reiter-Foster Oil Corp. agrees.

In the latter event, owners of leases adjoining the property of the Blackwell Oil & Gas Co. in 11-7-6 agree to give that company a head start of 45 days before beginning any offsets.

In visualizing the present situation in Seven-Six it is necessary to review its discovery and development. In December, 1927, two wells, the Snowden & McSweeney's No. 1 Tiger, in the NW NW of 13-7-6, and the Independent Oil Co.'s No. 1 Harris, in the SW NW NW of 23-7-6, opened up a large area for exploration.

Under shutdown agreements then in force the wells were pinched into 100 barrels a day, and no offsets were started to these wells, nor wildcats in the township.

On March 1, the expiration date of the agreements then in force, three offsets to each of these wells were started. In addition to these, 10 test wells were started so located as to explore thoroughly the likely territory in the general vicinity of the two producers.

The location and drilling of these tests constituted one of the longest steps the industry has taken toward cooperative development. Dry hole contributions totalling $30,000 per test were provided for, the operators who drilled the wells agreeing to shut them in to 50 barrels daily three days after completion, should they be producers.

This shut in condition was to prevail until such time as any offset to any of the 10 wells should be completed, after which all wells could be produced to capacity. The second crop of wells was not to be started before May 15. Under this plan wells with initial productions as high as 4000 and 5000 barrels have been pinched in.

Results of the 10 test wells have put the operators somewhat in the position of the little boy who pulled the lion's tail at the circus, thinking it was a pussy cat. In spite of the two 2700-barrel discovery wells in the field, it was felt that two small pools had been discovered. With five of six tests which have been recently completed starting off as producers at better than 2500 barrels, and but one dry hole, it appears that there are at least 2000 acres of extremely likely territory in the new extension to the Little River field.

For such the new territory has definitely proven itself to be. Falling pressures in some of the shut in wells, brought about by the full blast production of the original Little River Pool to the north have determined this to the satisfaction of the operators.

Pressure drainage, rather than oil drainage, is causing lease holders in seven-six the most worry. It is thought that the wells north of the line which bounds the shut-in territory on the north are not close enough to drain much oil. But by draining the pressure, the natural expelling force behind the oil, these north wells are increasing the difficulty and expense of producing the seven-six area when it is opened up.

THE Blackwell Oil & Gas Co. in particular feel that the Pure Oil Co. well in the NE SW NE Sec. 11 is damaging its lease on the northwest of the southeast of the same section. The Pure is of the opinion it cannot shut in its well while the rest of the Little River pool is producing to capacity.

In view of these conditions, first the fact that the area is part of a pool the rest of which is producing to capacity, second the loss of natural pressure on the sand, and third the varying interests and internal problems of the operators, to say nothing of the complications of the royalty owners, make an equitable and effective shutting in of the township something of a task.

Yet the very magnitude of the task adds to the necessity for accomplishing it. With at least 2000 acres of highly potential territory in sight, and nothing to condemn the area south of the new Independent well in the SE NW of Sec. 23, which is starting off at the time of writing at 125

NOT only in Oklahoma are operators attempting, through voluntary cooperative efforts for the most part, to hold back production in flush fields, in line with market demand.

In the Hendricks field, Winkler county, west Texas, a proration agreement is now in effect which reduces production in the west Texas areas by 150,000 barrels a day. Proration continues in the Yates pool in Pecos county in the same general territory. *Read the story on Page 21 of this issue.*

In California also the operators' advisory committee in the general gas conservation movement has advised operators to consider application of back pressuring methods to individual properties, where agreements among all operators in a field cannot be secured. *Story is on Page 29.*

barrels an hour, the possibilities of another major pool are easily forseen.

Comparisons of the sea level elevations at which the sand has been encountered indicate a large productive area. The high seems to begin in Sec. 14, the highest of all being the Sinclair Oil & Gas Co. No. 1 Teewee, with a sub-sea level elevation on the sand of 3163 feet. But two feet lower is the Independent Oil & Gas Co. well in Sec. 23, producing from a sub-sea level elevation of 3365 feet. The dry hole of the Prairie Oil & Gas Co. in Sec. 12 got water at a minus 3384, while the Gypsy Oil Co. got a 4000-barrel well at minus 3374, but 10 feet higher.

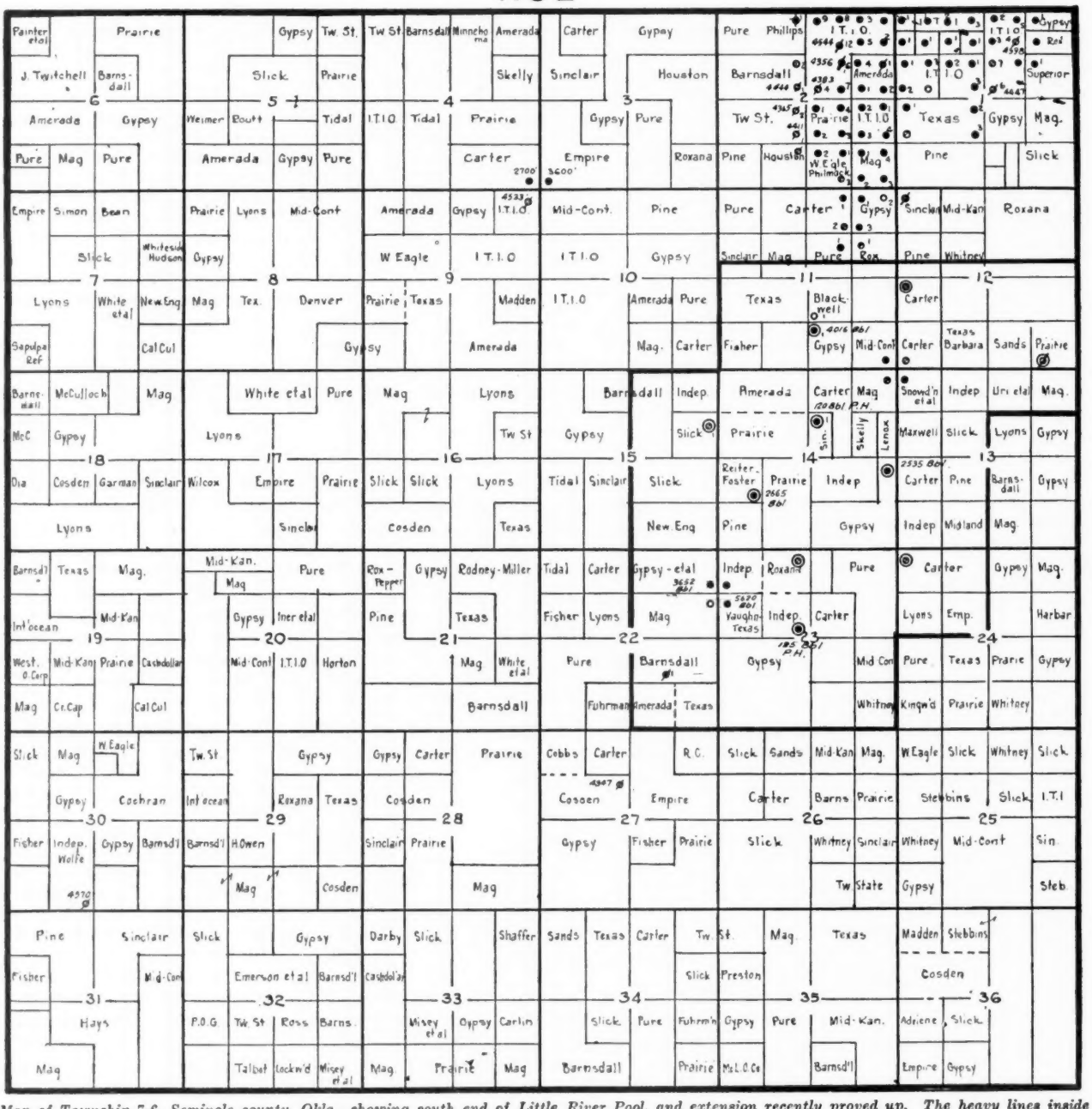
In the past 60 days township Seven-Six has changed from an area generally regarded as tricky and spotted to the most important potential producing area in the Mid-Continent, if not in the entire country.

It is the focus this week for the eyes of the industry, for on the surface it appears as the most severe test to which the newly acquired cooperative desires of the industry can be put.

Table showing status as of May 5, of the ten test wells in the South Extension to Little River, Seminole District, Okla. All are in Township 7-6.

Company	Sec.	Depth	Result
Gypsy	11	Sand at 4297-4300	I.P. 4000 barrels
Carter	12	Setting 6-inch at 4143	
Prairie	12	Sand at 4218	H. F. W.
Gypsy	14	Sand at 4441-4444	I.P. 2555 barrels
Reiter Foster	14	Sand at 4256-4257	I.P. 2765 barrels
Sinclair	14	Sand at 4125-4130	I.P. 3195 barrels
T. B Slick	15	Drilling at 3950	
Independent	23	Sand at 4295-4300	I.P. 125 barrels per hr.
Roxana	23	Drilling at 4170	
Carter	24	Rigging up Standard tools at 3994	

Oklahoma's Newest Big Oil Field



Map of Township 7-6, Seminole county, Okla., showing south end of Little River Pool, and extension recently proved up. The heavy lines inside the township enclose the area covered by shut down agreement. Test wells drilled in cooperative basis are circled. Solid black circles are producers.

Big Growth in Spot Sales of Gasoline To Jobbers This Year

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, May 7

REMARKABLE growth in the volume of gasoline sold by refiners in Oklahoma direct to the jobbing trade on a spot market basis has taken place during the first quarter of the year.

The spot market sales of gasoline likewise constituted a greater and greater proportion of the entire gasoline shipments of the state for that quarter.

This growth of spot business between refiner and jobber has come in a period when the gasoline market has shown uniform strength, with a gradually advancing tendency almost unparalleled in the history of this area.

Although business has fluctuated widely from week to week since the first of the year, the price of 58-60 U. S. Motor gasoline in tank car lots has crept upwards steadily.

There have been no spectacular advances such as have marked some previous springs when gasoline has risen quickly a half cent or cent per gallon, nor have the periods of slack business resulted in sharp recessions in the refinery prices such as occurred in previous years.

The course of U. S. Motor gasoline prices since the first of the year and the volume of spot market sales of all grades of gasoline made direct to jobbers can be visualized most readily by consulting an accompanying chart, Fig. 1. With this chart should be studied a second graph, Fig. 2, which gives an estimate of the proportion to all other sales of spot market sales of gasoline to jobbers.

These two charts have been prepared from the records of Platt's Oilgram and the NATIONAL PETROLEUM NEWS and from monthly reports of the U. S. Bureau of Mines. The records of the Oilgram and NATIONAL PETROLEUM NEWS which were used consist of the reports of gasoline sales gathered daily by the two agencies and used in preparing weighted average gasoline prices. The reports have been verified by periodical checks of actual transactions. They cover, at the present time, the activities of 83 per cent of the refinery capacity of Oklahoma which is sold on the spot market. At the beginning of January the reports covered 81.8 per cent of the capacity of the state being operated by refiners who sell on the spot market.

The lowest curve on Fig. 1 represents the daily average number of cars of gasoline sold direct to jobbers on a spot basis each month. It will be observed that this average was 74.5 cars per day in January, 87 cars per day in February, 111 cars per day in March and 130 cars per day in April.

With this curve should be compared Fig. 2, which gives an estimate of the amount of spot gasoline sold to jobbers, as compared with total shipments reported by the U. S. Bureau of Mines. In the preparation of this estimate a tank car capacity of 8227 gallons was used. This figure was taken from the 1926 report of the Interstate Commerce Commission showing the tonnage of petroleum products moved that year and represents an average for all cars of refined products shipped that year.

The actual number of spot cars sold was increased to an estimated 100 per cent for the state by assuming that the 17 per cent of non-reporting capacity shipped approximately the same proportion of its output on the spot market as reporting plants. An accompanying table gives the actual number of cars sold each day and an estimate of the total for the state.

On this basis it was estimated that Oklahoma refiners sold 14.71 per cent of their gasoline on a spot basis to jobbers in December and shipped the remainder on future sales, sales to brokers, sales to export and on contract to jobbers or their own station systems. In January this had risen to 18.56 per cent, in February to 21.94 per cent and in March to 22.96 per cent.

Bureau of Mines figures showing gasoline shipments in April will not be

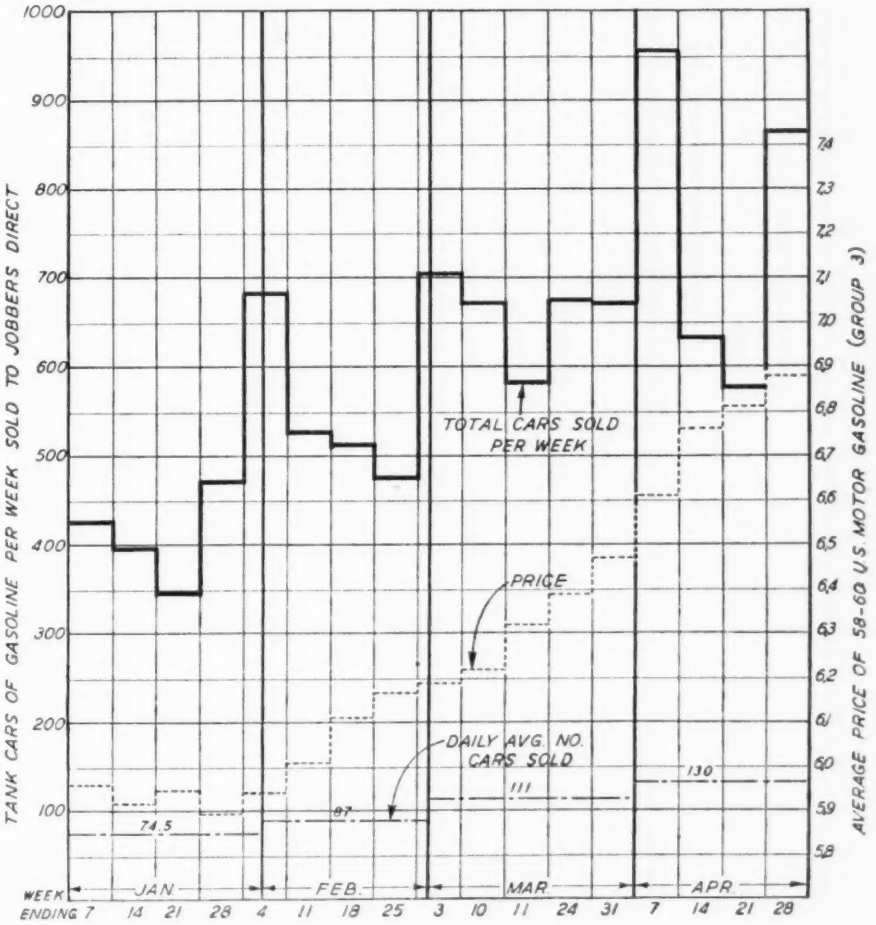

TANK CARS OF GASOLINE PER WEEK SOLD TO JOBBERS DIRECT
AVERAGE PRICE OF 58-60 U.S. MOTOR GASOLINE (GROUP 3)
TOTAL CARS SOLD PER WEEK
PRICE
DAILY AVG. NO. CARS SOLD
74.5
87
111
130
JAN
FEB.
MAR
APR
WEEK ENDING 7 14 21 28 4 11 18 25 3 10 11 24 31 7 14 21 28

Fig. 1—Shows volume of gasoline sold by Oklahoma refiners direct to jobbers and the weighted average price by weeks since Jan. 1. Chart covers sales of from 81.9 to 83 per cent of the capacity of all refiners in the state selling on the spot market

available for 30 days, but it seems probable that the percentage continued to increase in that month. It will be observed that total cars sold jumped from 2998 in March to 3248 in April. On a gallonage basis this would increase the estimate of total spot gasoline sales from 29,641,881 gallons in March to 32,192,251 gallons in April.

Some of this increase in percentage of gasoline sold spot to jobbers may be attributed to growing demand from consumers and some to speculative buying by jobbers in advance of consumption. Jobbers buying on contract normally provide for a more or less steady supply of gasoline as a back-log, and then buy additional amounts on the spot market as they see a chance for a profit, or as consumption increases beyond their estimates.

Another part of the growth in spot business may be attributed to a changing policy on the part of refiners.

Some refiners are not writing contracts as freely this year as in the past. They feel that they should be represented in the spot market more regularly and in greater volume, so their activities may help fix the going market price. How great this tendency is cannot be estimated with the limited history of trading now available. By the end of the year it will be possible to get a better idea of the trend.

In Fig. 1 the top curve represents the total number of cars sold spot to jobbers each week since the first of the year. From this curve can be seen the wide fluctuations in spot purchases from week to week, such as are caused in the early spring by bad weather periods and other factors.

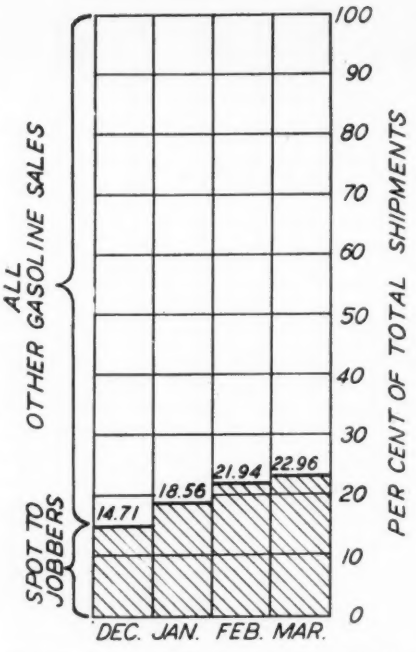


Fig. 2—Percentage relationship of spot gasoline sales by Oklahoma refiners direct to jobbers to all other classes of gasoline sales

An important deduction as to the buying habits of jobbers can be found in the curve. It is indicated that jobbers normally check up their storage and estimate business for the next month along toward the close of the month. They then place their spot orders. In every month since the first of the year spot business has been at its maximum at the turn of the month and at its minimum about the third week of the month.

Fluctuations in spot sales were widest in April, when more than 950 cars were sold in the first seven days of the month, as compared with 573 cars in the week ended April 21 and followed by nearly 900 cars again in the week ended April 28.

It is these wide fluctuations in sales which have a weakening effect on the refinery market, just as well as the rush periods have an abnormal strengthening effect. This may be seen by comparing the sharp price advances the first two weeks of April with the narrow advance made the third week of the month. It is known that some refiners considered lowering their prices the third week of April to stimulate business. The growth of sales in the last week of the month proves definitely that business would have picked up again without any price stimulus.

TABLE NO. 1

NUMBER OF CARS OF ALL GRADES OF GASOLINE SOLD TO JOBBERS ON THE SPOT MARKET BY OKLAHOMA REFINERS (EXCLUDES FUTURES, BROKER, EXPORT AND CONTRACT SALES.)

Month Day of	Actual Sales as Reported to Oilgram				Sales by All Oklahoma Plants Estimated			
	Jan.	Feb.	Mar.	April	Jan.	Feb.	Mar.	April
1	*	97	134	*	*	118	161	*
2	25	98	176	287	31	120	212	346
3	91	117	99	195	111	143	119	235
4	75	61	*	191	92	74	*	230
5	68	*	98	133	83	*	118	160
6	77	120	118	81	94	147	142	98
7	87	96	177	67	106	117	209	81
8	*	94	85	*	*	115	102	*
9	98	70	104	103	120	85	125	124
10	72	78	87	171	88	95	105	206
11	71	66	*	93	87	81	*	112
12	65	*	126	78	79	*	152	94
13	51	110	87	128	62	134	105	154
14	39	73	92	65	48	88	111	78
15	*	83	95	*	*	100	114	*
16	71	91	80	149	87	110	96	180
17	65	83	100	107	79	100	120	129
18	58	71	*	63	71	86	*	76
19	67	*	119	78	82	*	143	94
20	41	105	98	97	50	127	118	117
21	42	96	90	79	51	116	108	95
22	*	81	139	*	*	98	167	*
23	93	65	114	130	114	78	137	157
24	71	67	112	219	87	81	135	264
25	77	59	*	140	94	71	*	169
26	87	*	180	113	106	*	217	136
27	73	102	94	138	89	123	113	166
28	68	113	118	120	83	136	142	144
29	*	78	70	*	*	94	84	*
30	86	....	103	223	105	....	124	268
31	221	....	103	....	270	....	124	....
Totals	1939	2174	2998	3248	2369	2637	3603	3913

REPORTING CAPACITY IN PER CENT OF TOTAL OPERATED BY REFINERS SELLING IN THE OPEN MARKET

January 1 to 30	81.8%	February 14 to March 6	83.0
January 31 to February 13	81.9	March 7	84.8
		March 8 to April 25	83.0

Hickok Acquires Rights To Gyro Process

CLEVELAND, May 7.—As part of its expansion program, Hickok Producing Co., Toledo, O., has purchased the plant of the Great Lakes Refining Co. at Toledo. It will rebuild it into a larger refinery. With the plant Hickok company acquired rights to use the Gyro vapor phase cracking process.

The refinery, when completed, will have a daily capacity of 6000 barrels of crude, said A. S. Close, general manager of the company. Western crude will be run.

The Hickok company has considerable production in North Texas and natural gasoline plants. It has distribution in Ohio and Michigan which will be expanded to absorb the refinery's output.

The company's marketing properties are considered among the most profitable in its territory. It sublets its stations under close supervision to individual operators, who stock it with gasoline, oils and greases which each operator buys from the Hickok company for cash. Its stations have never cut prices, although they have gone through some severe price wars. It was in one of these price wars, in Toledo last year, that the company began to use cushions and other articles as trade pullers.

The Great Lakes plant was built to develop the ideas of S. Y. Ramage by a company in which Detroit automobile men predominated. A few months ago it was badly damaged by fire and has not been operating since.

Hickok has organized a subsidiary company, the Hickok Refining Co., to operate the new branch of its business.

TULSA, May 7.—The Dixie Oil Co. has started operating its refinery at Superior, La., in the Shreveport district. The plant is a 3,000-barrel skimming plant which the company purchased some time ago from the Paramount Petroleum Co.

Winkler Prorating Cuts West Texas Output 150,000 Barrels

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, May 5

PRORATING of Winkler crude, officially put in effect May 5, will reduce west Texas production more than 150,000 barrels daily from the high mark of about 450,000 barrels reached in the present week.

It will cut the Winkler field production to 147,839 barrels daily, from a high mark of 300,209 barrels reached May 4, and a daily average of about 275,000 barrels for the week of April 29-May 5.

Official gages of Winkler wells for prorating purposes showed them capable of giving up 521,587 barrels daily. On this basis, it appears there is now shut in possible daily production of 373,748 barrels additional oil in the Winkler area.

Potential production figures are based on one-hour tests of individual well flows adjusted to 24-hour periods. The method used is similar to that followed in testing Yates field wells under the original plan used by the Pecos county prorating committee.

Allotments of Winkler production, shown in comparison with potentials in an accompanying table, were reached by a combination of the proved acreage and potential production yardsticks. The field was first divided into 40-acre producing units and each company's proved acreage figured in relation to the whole.

For example, a company with 10 producing units would, under the proved acreage plan, get 7.9 per cent of the field allotment, there being 79 such units at the beginning of the prorating period.

Using round figures for convenience, a company with 52,000 barrels potential out of a 520,000-barrel field total would have 10 per cent allotment under the potential production plan.

In illustrating how the combined yardstick works, it is assumed that the foregoing figures apply, in both cases, to a single producing company in the field. The two percentage figures are added together, 7.9 plus 10 equals 17.9, then divided by two to strike an average; resulting in the final percentage of 8.9 of the total, or 13,157 barrels out of the 147,839 barrels of total allotment.

It is this combined yardstick that the Pecos County prorating committee is now studying[1] with the idea of changing over from the proved acreage plan after June 1, for the Yates field.

Originally, Yates field operators used the potential production method. They found, however, it caused more drilling than necessary because companies sought to increase their percentages of outlet by building up potentials.

The more satisfactory proved acreage plan remains in effect for the present, but it fails to recognize the individual values of large and small wells to the extent possible under a combination of the two yardsticks.

Students of prorating measures believe the Winkler plan promises to be the most successful of the yardsticks applied to west Texas prorating and that the Pecos county committee will work out a similar arrangement; possibly, however, establishing the acreage unit at 80 acres, or 160 acres, because of leaseholdings in the Yates field making this more practicable.

Should prorating result in the Settles-Roberts deep lime area of southeastern Howard county, where a field committee is now studying conditions[2], the combined yardstick may be applied there also.

Representatives of Winkler field operators, working with Harold N. Pardee, umpire, of Cisco, completed their allotment figures a day in advance of the effective date of the railroad commission order putting prorating into effect.

Winkler allotment figures were generally considered to be satisfactory at the time prorating was begun. Adjustments may be necessary, however, to compensate for some wells not capable of producing the quantities earned for them by the acreage factor in the combined yardstick.

A peculiarity in the working of the combined yardstick resulted in the case of Murchison and Cranfill Brothers, whose allotment totaled 2266 barrels, as against only 903 barrels their wells can produce.

Prorating machinery was put in motion without further threats of the order being contested by any of the operators. Cranfill & Reynolds, Inc., and Magnolia Petroleum Co., which had been credited with plans for possibly making a contest, failed to make any move in that direction.

Winkler County, Texas Potential Production and Allotments Under Prorating Order Effective May 5.

Company	Potential Production Barrels	Allotment Barrels
Humble Oil & Refining Co.	52,111	14,136
Landreth Production Co.	12,225	5,555
Magnolia Petroleum Co.	2,866	2,310
Murchison & Cranfill Bros.	903	2,266
Independent Oil & Gas Co.	13,795	8,151
Roxana Petroleum Corp.	74,623	18,321
Atlantic Oil Producing Co.	114,768	25,044
Cranfill & Reynolds, Inc.	90,755	14,235
Gulf Production Co.	30,437	10,070
Pure Oil Co.	40,843	13,466
Republic Production Co.	17,779	5,403
Southern Crude Oil Purchasing Co.	49,549	21,362
Texon Oil & Land Co.	10,716	3,439
California Co.	5,897	2,746
Marland Production Co.	4,320	1,335
Totals	521,587	147,839

IMMEDIATELY prior to the prorating order taking effect, the railroad commission issued a revised set of regulations eliminating rule 2, as recommended by the operators' advisory committee of seven.

Rule 2 had specified that each purchaser of crude in the Winkler field must "nominate to the railroad commission the daily quantity of oil such purchaser would purchase for current transportation" in the semi-monthly prorating periods set up by the order; and the sum of the quantities to be purchased daily for current transportation from the field by those so nominating would have constituted the field outlet, whether the total reached the 150,000 barrels maximum allowed by the prorating order or not.

With rule 2 eliminated, and other regulations revised to conform, each producing company in the Winkler field may now run its own oil, sell or store, as seen fit. This allows handling of the situation without the embarrassment that might have resulted in the case of the Cranfill & Reynolds 3,000,000-barrel storage contract with Magnolia Petroleum Co., as well as in other instances.

[1] NATIONAL PETROLEUM NEWS, May 2, 1928, page 21.

[2] NATIONAL PETROLEUM NEWS, May 2, 1928, page 22.

Unit Operation Urged as Policy To Bring Stabilization

TULSA, May 5

UNLESS the oil industry finds means to control development and production, it is threatened permanently with a supply in excess of demand as long as there are potential areas in the United States to be explored.

Thus, W. N. Davis, president of the Mid-Continent Oil & Gas Association, in a statement issued today utters a warning that is believed to presage study and activity by the association to mold sentiment and assist operators in formulating plans whereby voluntary cooperation in development will become the rule.

The association until a few weeks ago has been painstaking in its efforts to keep away from the question of industry control, including as it does a membership of varied opinion. The first move it made in this direction was the appointment of a committee in March to ascertain the status of wildcatting in Oklahoma and Kansas. This action was taken by the Kansas-Oklahoma division of the association, and not by the association as a whole, which includes Texas and Louisiana-Arkansas divisions.

In issuing the Davis statement, the association invited comment on the outline of the situation and the proposals contained therein. The statement is as follows:

"Conservation of the nation's petroleum resources and the economic troubles of the oil industry have been so constantly under discussion for several years that it would seem there could be little left unsaid, and should be little left undone, to correct the undesirable conditions; but, without detracting in any way from the credit due to those who labored so earnestly and arduously to attain the cooperative action in the Seminole area, it must be said that what was accomplished there was in the nature of emergency cooperation which marked little or no progress in the direction of permanent correction to the evils complained of.

"The same points hold in connection with the cooperative curtailment of production in California and one or two other areas where, ownership being limited to a few, cooperation was proportionately less difficult. The progress made in these instances, indicating as it does an awakening realization among oil producers of the necessity for control and a growing spirit of mutual confidence, is encouraging, but falls far short of what is needed.

"We must have cooperation to prevent emergencies, rather than cooperation in emergencies to prevent utter demoralization and disaster. The gentlemen who participated in the many Seminole conferences would, I think, all testify to the many obstacles to agreement—in some cases unsurmountable—with which they were confronted and that the results fell far short of being all that the industry needed.

"There may still be those who will contend that the present emergency will pass, and with it, the need for cooperation and control, but many careful students of the industry believe that the application of science to the finding of oil has so facilitated its discovery that the industry is now permanently threatened with a supply in excess of demand so long as potential areas in the United States remain unexplored, unless means are found to control development and production.

"The time to effectively control the production of an oil pool is before it is found, and, where there are more than a very few interests involved, it is the only time that it can be done.

"A policy of unit development or the unitizing of potential producing areas before development is not new, but programs so far presented for its universal application have met with overwhelming opposition—probably because they involved compulsion. There have been a few cases where operators have voluntarily pooled their interests in advance of development, and I am convinced that the general adoption of such voluntary action would provide a permanent and effectual cure for most of the ills of the industry, all of which arise from one source—unreasonable competition.

"Eliminate such competition—and oil pools will be developed in a scientific orderly and economic manner, with a much larger recovery of oil from a much smaller number of wells and the fullest practicable utilization of the gas, thus reducing both development and operating costs and waste of gas, and adding largely to the nation's recoverable reserves of a natural resource essential to the prosperity, happiness and defense of its citizens.

"Assuming a realization throughout the industry of the advantages of such pooling of interests in advance of development, apparently little would stand in the way of its adoption except differences of opinion among owners of both working and royalty interests as to the relative values of their respective holdings. It would seem that, if what is to be gained is compared with the concessions which might have to be made to reach an agreement, it would show how short-sighted it is to let such differences stand in the way.

"The oil producer relies upon the law of averages, and, if the practice of pooling interests in advance of development was universally, or even largely adopted, the law of averages would work just as effectively as it now does, where each producer operates independently under conditions of intensive competition, with all its accompanying evils.

"The disposition of the oil as produced would be made a part of the pooling agreement. This might involve some difficulties, and I realize other objections can be made, but I repeat that, in comparison with the gain to be derived, all these difficulties should fade into insignificance. Such a program may not appeal to the ambitious individualist who insists on maintaining absolute independence of action, but I am sure it would appeal both to the stockholders of oil companies and to the people of the United States, if they realized all that it would mean to them."

W. P. R. A. Technical Men To Meet at Shreveport

TULSA, May 7.—The spring technical meeting of the Western Petroleum Refiners Association will be held at Shreveport on June 4 and 5, according to an announcement by Howard Bennette, managing director. Plant superintendents, engineers, chemists and other technologists will gather for a discussion of operating problems. The program is being prepared by J. A. Sartori, general superintendent of refineries for the Producers & Refiners Corp., and H. W. Camp, general superintendent of refineries for the Empire Oil & Refining Co.

Harry Kennedy is New Marketing Manager

TULSA, May 7.—Harry J. Kennedy has been made manager of the marketing departments of the Marland Refining Co. He will have general charge of both wholesale and retail sales activities of the company. Announcement of the appointment was made May 1 by C. C. Brown, general manager of the Marland companies.

Mr. Kennedy has been associated with Marland for nine years. After a period of work in the refinery at Ponca City he was made president of the Marland Refining Co. of Indiana, with headquarters at Hammond. Later he moved to Ponca City as manager of operations for the retail marketing department. Several months ago he became manager of national distribution, serving in that capacity until his recent promotion.

All Rebates on Gasoline Prices Forbidden In Mississippi by New State Law

CLEVELAND, May 5

THE state of Mississippi now has legislation designed to do away with some of the oil marketing practices that have been set forth as unfair in codes of trade practices drawn in other parts of the country.

The Mississippi Oil Men's Association is largely responsible for this law, which became effective April 23, according to J. J. McEwen, Jackson, secretary.

Bonuses, rebates or price concessions of any kind for the purpose of "preventing, hindering or destroying" competition are unlawful, penalties being fine or imprisonment, or both, for officers of companies engaging in them.

Furthermore, the law provides that the giving of such concessions shall be considered as prima facie evidence of a purpose to destroy competition.

Another clause in the law apparently provides that oil companies making terms with dealers by which the latter are allowed more than the margin provided for in the open price schedule, such as equipment, property improvements and so on, shall keep a record of all such special concessions, which record shall be open to state and municipal officers.

The law also provides that "nothing in this act shall prevent any company from meeting legitimate and lawful competition any place in the state."

Recovery by the state of all sums received for gasoline sold at less than generally prevailing prices is provided for, together with the amount of the concession or rebate.

Following is the text of the law; passed by the 1928 legislature as senate Bill 474:

"Section 1. Be it enacted by the Legislature of the State of Mississippi: That it shall be unlawful for any person, corporation, partnership or association, or any officer, agent or employe thereof engaged or engaging in the sale or distribution of gasoline at wholesale or for the purpose of resale in the State of Mississippi to give or allow rebate, bonus, or concession of any kind whatever in the sale or distribution of gasoline as aforesaid, for the purpose of hindering, preventing, or destroying competition and such person, corporation, partnership or association, or any officer, agent or employe thereof giving or allowing any such rebate, bonus or concession for the purpose of hindering, preventing or destroying competition shall be guilty of misdemeanor or and upon conviction shall be fined not less than Fifty Dollars ($50.00), nor more than Five Hundred Dollars ($500.00), or imprisoned in the county jail not less than thirty days (30) nor more than ninety days (90), or both, for each offense, and in addition thereto he shall forfeit to the State of Mississippi not less than Five Hundred Dollars ($500.00) nor more than One Thousand Dollars ($1,000.00) for each violation of the provisions of this Act, which penalties shall be collected by the Attorney-General by attachment or other appropriate proceedings.

"Section 2. That from and after the passage of this Act it shall be the duty of all persons, corporations, partnerships and associations engaged or engaging in the sale or distribution of gasoline at wholesale or for the purpose of resale in the State of Mississippi to maintain a price or prices extended and available to all persons, firms, corporations, or associations alike; and all such sellers or distributors making or allowing any concessions, improvements, gratuities, and or equipment furnished shall provide and keep a record of same, which shall be open to the inspection of any public officer of the State of Mississippi, or any municipal sub-division thereof, during the period such concessions, improvements, gratuities, and or equipment are furnished by such seller or distributor. And the giving or allowing of any rebate, bonus, or concession of any kind whatever in the sale or distribution of gasoline, as aforesaid, shall be prima facie evidence of the purpose to hinder, prevent or destroy competition in the sale or distribution of gasoline within the State. Provided that nothing in this Act shall prevent any person, firm or corporation engaged in the sale and/or distribution of gasoline from meeting legitimate and lawful competition in any locality in the State.

"Section 3. All contracts made in violation of the provisions of this Act shall be void and any person, corporation, partnership, or association giving or allowing for the purpose of destroying, hindering or preventing competition, either directly or indirectly, any bonus, discount, secret contract, unusual or unnecessary allowance or expenditures to any person, corporation, partnership or association shall forfeit to the State of Mississippi to be recovered by the Attorney General or any district or county attorney, by suit or otherwise, all sums received for gasoline sold at less than the prices prevailing on the date of sale and an amount equal to such bonus or gratuity, and in any proceedings brought for the recovery of any money under this Act, the plaintiff shall be entitled to a production in court for inspection and use in trial, of all books, papers, records and memoranda and account of the defendant pertaining to all sales, expenditures, gifts, or contracts made by said defendant, and the violation of any provision of this Act shall be prima facie evidence of the intent to destroy, hinder, or prevent competition.

"Section 4. When and where the violation of any of the provisions of this Act shall occur the continuation or repetition of the unlawful thing or act by the offending person, partnership, corporation or association may be prevented by writ of injunction issued by any court of record upon a bill filed by any district attorney or the Attorney-General or by any citizen or citizens of the county, but no injunction shall be issued upon the petition of any citizen or citizens until a good and sufficient bond, to be fixed by the court, conditioned as now provided by law for such bonds, shall have been executed and approved by the clerk of the court in which said injunction is issued.

"Section 5. The retention by any person, corporation, partnership or association in its employ or re-employment in any capacity of any agent, servant, or employee after a conviction of such agent, servant, or employee, of the violation of any of the provisions of this Act, shall be prima facie evidence of notice and knowledge of said violations of the provisions hereof by such agent, servant or employee, and any such person, firm, partnership or association shall be liable for penalties imposed by the provisions of this Act for any subsequent violation or violations of any of the provisions of this Act by such agent, servant or employee.

"Section 6. If any section, paragraph, sentence, or clause of this shall be declared unconstitutional or illegal, such unconstitutionality or illegality shall not affect or destroy any other part, provision, or section of this Act.

Section 7. That nothing in this Act shall be construed as to relieve any person, firm, or corporation from any pains, penalties or forfeitures heretofore arising under any other laws of this State.

Section 8. That this Act is to take effect and be in force from and after its passage."

Liquefied Gas for Domestic Use To be Sold by Skelly

Staff Special
TULSA, May 7

TO CREATE a market for by-products of its natural gasoline plants, the Skelly Oil Co. has created a new division to be known as the Skelgas Utility Division. The division will undertake the sale of liquefied petroleum gas for heating purposes in territory where natural gas is not available.

Skelgas will consist largely of propane which is to be prepared* at Oklahoma and Texas gasoline plants. It will be sold in 20-gallon high pressure drums measuring 13 by 46 inches. It is calculated that each drum will contain enough liquid to furnish gas for a single burner for about 375 hours.

Equipment for an installation will consist of a steel cabinet to house the drums and proper connections to the gas appliances within the buildings. The steel cabinets will be located outside of buildings for safety and easy servicing. Each installation will require the use of two drums, only one of which will be used at one time.

The special drums are equipped with fusion plugs which will melt at 160 degrees Fahr. and with fracture disks. Each drum is tested to 600 pounds hydrostatic pressure. On actual bursting tests drums have split about 1,400 pounds pressure.

The liquefied gas contained in the cylinders will exert a pressure of about 30 pounds per square inch at zero Fahr. and hence will completely vaporize as pressure is released at all ordinary temperatures. The gas will work in any burner designed for natural gas.

It is claimed by the company that Skelgas will contain about 2,700 B.t.u. per cubic foot of vapor as compared with about 500 for artificial gas and 1,000 for natural gas. It is this high B.t.u. content which will enable the company to sell the product on the basis of about 3 4/5 cents per burner hour.

For the present Skelgas will be bottled at the gasoline plants where it is produced and shipped to dealers. Later it is the plan of the company to build distributing points to which the liquefied gas can be shipped in tank cars and bottled, to cut down freight costs.

Installations of stoves, hot water heaters and connections with drums and cabinets will be sold direct to consumers under the direction of Earle S. Barber, manager of the utility division, and through agencies which may be established. Servicing of the installations will be cared for by agencies such as oil jobbing companies and the Skelly station department.

Salesmen who are being put on the road are equipped with actual demonstrating models. One case will contain small drums filled with the liquefied gas and another will contain a small gas hot plate. By connecting the two before the prospect the salesman will be able to demonstrate the high heating value of a small flame.

In addition to the market which is to be sought in summer resorts, on the farm and in small towns the company expects to suggest the use of the product by the ceramic industry, in schools and hospitals and the like. Sales work will be carried on partly in cooperation with manufacturers of stoves and other appliances burning natural gas.

The Skelly Oil Co. believes that it is the first oil company to create a separate division to market such a by-product direct to the consumer. In the east liquefied petroleum gas has been sold for some time in drums for use on yachts, in summer resorts and for domestic cooking stoves but usually by special companies organized for that purpose.

*See Page 54 of the April 18, 1928, issue of NATIONAL PETROLEUM NEWS, Vol. XX No. 16, for article describing double stabilizer installed at an Oklahoma natural gasoline plant for the manufacture of liquefied petroleum gas.

National Oil Scouts Plan For Amarillo Meeting

HOUSTON, May 4.—Texas, Louisiana and Arkansas "eyes of the industry," who are organized as the National Oil Scouts of America, will hold their fifth annual convention at Amarillo, May 21-22.

After a welcome by Lee Bivins, mayor of Amarillo, the principal talk will be made by William B. Sutton, of Houston, general manager of the crude oil department, southwest division, Vacuum Oil Co. Reading of papers and transaction of business will follow at the day sessions.

The annual banquet will be held in the crystal ball room of the Herring hotel the night of May 21. At the morning business session, May 22, new officers will be elected. In the afternoon the annual golf tournament will be held at the Hill Crest country club and a stag barbecue at the Sloan Kritzer ranch on the Canadian river. The final ball will be at the Amarillo country club that night.

A special theater party will be given for the visiting ladies Monday afternoon, May 21 and a bridge luncheon Tuesday afternoon.

Coming Meetings

National Oil Scouts of America, Amarillo, Tex., May 21, 22.

Natural Gasoline Association of America, Hotel Mayo, Tulsa, May 22, 23, 24.

Automobile Associated Trades of Illinois, Hotel Morrison, Chicago, May 24, 25.

West Virginia Oil Marketers Association, Kanawha Hotel, Charleston, W. Va., June 14, 15.

New Production Division To Meet June 14-15

CLEVELAND, May 8.—The first general meeting of the newly formed division of development and production engineering of the American Petroleum Institute will be held June 14 and 15 at the Broadmoor hotel, Colorado Springs, Colo., in connection with the semi-annual meeting of the division of a standardization of the Institute.

The program for the meeting of the two divisions has been sent out by C. A. Young, director of the Institute division of standardization, from his headquarters in Dallas, Tex. Sessions of the standardization division start June 12.

The morning and afternoon sessions on June 14 will be devoted to committee reports and the evening session will be a general meeting of the division of development and production engineering. June 15 morning and afternoon sessions will be devoted to the reading of papers on production subjects by Fred E. Wood, Midwest Refining Co.; T. E. Swigart, Shell Co. of California; H. N. Marsh, General Petroleum Corp.; E. E. Germann, University of Colorado; H. J. Vance, Marland Oil Co., J. F. Robinson, Peoples Gas Co. and J. G. Montgomery Jr., United Natural Gas Co.

June 16 will be devoted to the golf tournament, which is always a feature of these meetings. The committee in charge of the tournament is as follows: W. A. Moncrief, Marland Oil Co. of Texas, chairman; W. L. McLaine, General Petroleum Corp., Los Angeles, F. O. Prior, Midwest Refining Co., Casper, D. B. Harris, Humble Oil & Refining Co., Shreveport and E. H. Williams, Union Tool Co., Carnegie, Pa.

The golf dinner, for all members of both divisions, will be held the evening of June 16.

All those wishing to enter the golf tournament are requested by Mr. Young to send their entries to Mr. Moncrief, 1804 W. T. Wagoner building, Fort Worth.

The complete program of the meeting of the two divisions will be published in this paper next week.

Driveway and loading rack at Cities Service Oil Co. bulk station between Lorain and Elyria, O. House, which was bought with station site, on right. Combination warehouse and garage in background.

One Bulk Station in the Country Replaces Two in Towns

By Paul Truesdell
N. P. N. STAFF WRITER

PROBABLY no hard and fast rule can be laid down as to how far apart bulk stations should be located or what maximum length of haul should be made from them by tank truck from an economic standpoint. Every marketing territory must be considered as an individual proposition because of its own peculiar conditions.

This story is to relate how one bulk station was substituted for two in a well populated district in Ohio, what factors were considered in selecting a site for the new station, how it was planned and built, how deliveries are made from it and what results have been accomplished by centering in one station the distribution activities that were formerly handled by two.

One thing it has accomplished—a very important thing too in these days—is a considerable reduction in distribution costs in the territory, according to the men responsible for the company's marketing activities.

The company concerned is the Cities Service Oil Co. of Ohio, Cleveland headquarters. The bulk station is located about midway between Lorain and Elyria, O., towns eight miles apart, and it replaces one station in Lorain and one in Elyria. Some of the benefits that have accrued to the company from the change are the following.

Reduced overhead, because the investment in the one present bulk station is less than the investment in the two former stations.

The average length of truck haul is less.

The payroll is reduced because it is necessary now to maintain only one station crew instead of two.

It would seem that locating the new bulk station midway between the two towns would make for longer truck hauls on the average than were necessary from the two stations but, as a matter of fact, the average truck haul was shortened by the change.

This is because hauling could be done from the Lorain station only on the radius of a semi-circle, instead of a circle. Lorain lies on the south shore of Lake Erie and so the lake cuts in half the area that can be reached from the station.

Besides the desire to locate the station where it would best serve the territory, the officers of the company were mindful that town property, even in small towns such as Elyria and Lorain (the former with a population of about 20,000 and the latter 37,000) is a good deal more expensive than property in the country, and for bulk station purposes is no better.

When officials began to look around for a bulk station site along the main road between the two towns, they were surprised to find what a high value the owners placed on their property. Prices all the way up to $15,000 an acre were asked.

But the would-be buyers took their time. Finally, convinced that purchase of a site on the main highway would be too expensive, they began to look at property on side roads, easily accessible.

A farm of five acres was found halfway between Lorain and Elyria, about 4 miles from each. The property had a good house on it and the price was $4800. Of course, the owners of the property were not told that the prospective purchaser was an oil company or the price would doubtless have been higher.

The farmyard is about 300 or 400 yards from the main paved highway and reached by a well cindered dirt road suitable for hauling by trucks all through the year. The Baltimore & Ohio railroad runs alongside the property.

A switch was put in by the railroad and the bulk station was built. The station consists of:

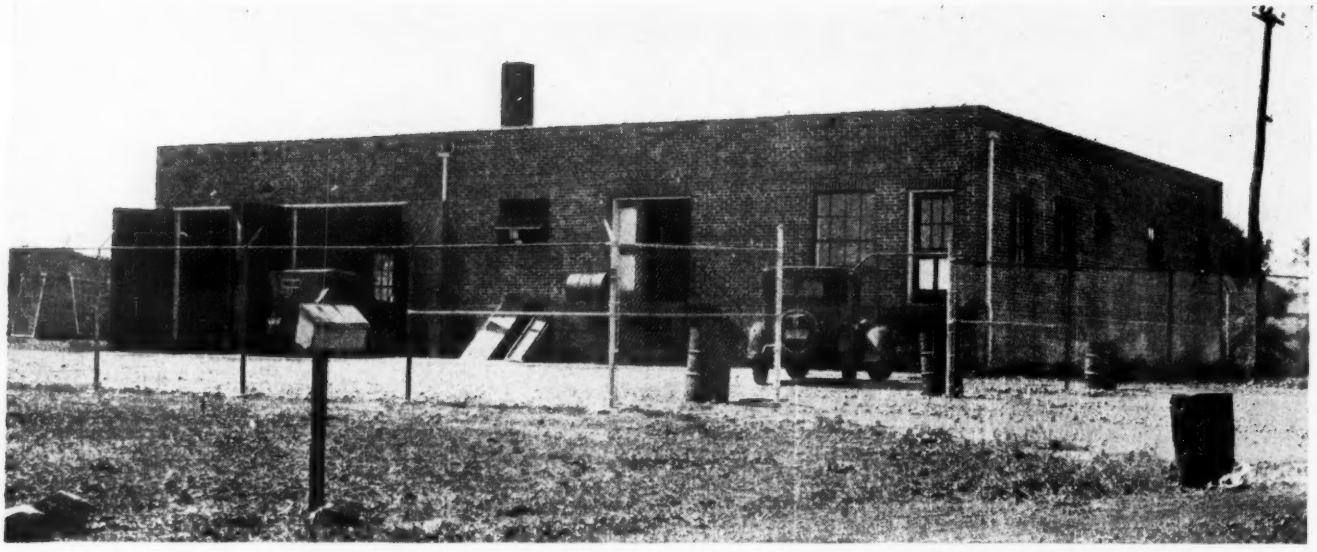
Six 16,000-gallon tanks, one for the storage of kerosene and the rest for gasoline.

A combination garage, warehouse and office building.

A pump house.

A two-truck loading rack.

Overhead unloading equipment by



Combination warehouse, garage and office at the Cities Service Oil Co. bulk station between Elyria and Lorain, O. Building tanks and loading racks are enclosed by a sturdy wire fence.

which two tank cars can be unloaded at the same time.

The tanks are mounted horizontally on concrete cradles and surrounded by an enclosure formed by an earthen dike and a concrete wall, which will hold one and a half times the capacity of the entire battery of tanks. The tanks were set horizontally, not because the company favors that style of installation, but because they were salvaged from the abandoned bulk stations and had dished heads which would not permit them to be set on end. The nearest tank is more than 60 feet from the building, which means an important saving in insurance premiums.

The warehouse-garage is of mill construction, brick, steel and concrete being the materials. It is one story high and 58 by 68 feet on the ground. It was designed nearly square so as to get the greatest possible space with the least possible area of wall and roof.

Hard burned common shale brick was used. The foundation is of concrete and there is a small basement under one side of the building. This basement is just big enough to house a heating boiler to keep the office livable in winter and to maintain the stored oils in the warehouse and the trucks in the garage in good condition.

The roof, which is of tar and gravel, is carried on steel girders, on the roof of the warehouse to catch ter up the storage space. The floor is of concrete as are the platforms, including the loading platform at the rear onto which package goods can be easily unloaded from box cars on the sidetrack. The steps, handrails and doors are steel.

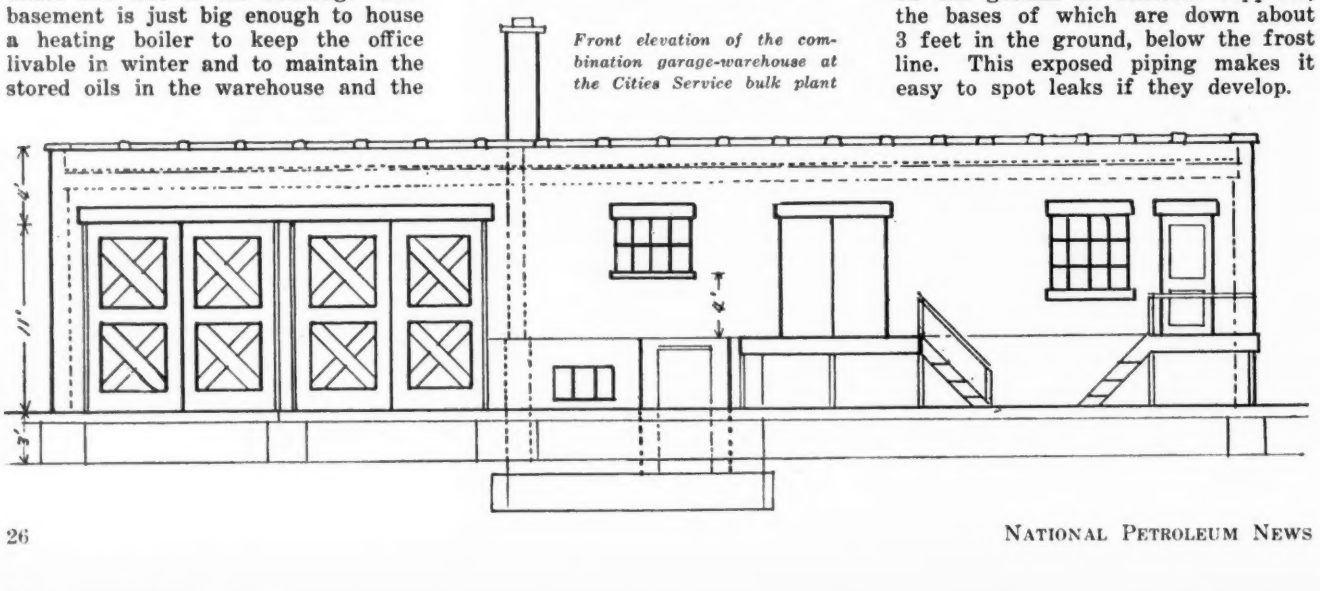
The office is in one corner of the warehouse, and just large enough to provide working quarters for the district manager and a clerk. The warehouse is large enough to store two carloads of packaged lubricating oils and greases. It is equipped with a chain hoist for handling heavy containers. Windows are of wire glass set in steel sash. The garage has room for six trucks.

When the station was built a well was dug 50 feet to furnish water for the heating boiler. An air lift pump, operated by a motor driven air compressor was installed in the well. It was found, however, that the water was so hard as to be unfit for boiler use so an arrangement was contrived on the roof of the warehouse to catch rain water for boiler feed and the well water is used for other purposes, such as washing trucks. A drainage system connected to a septic tank is installed.

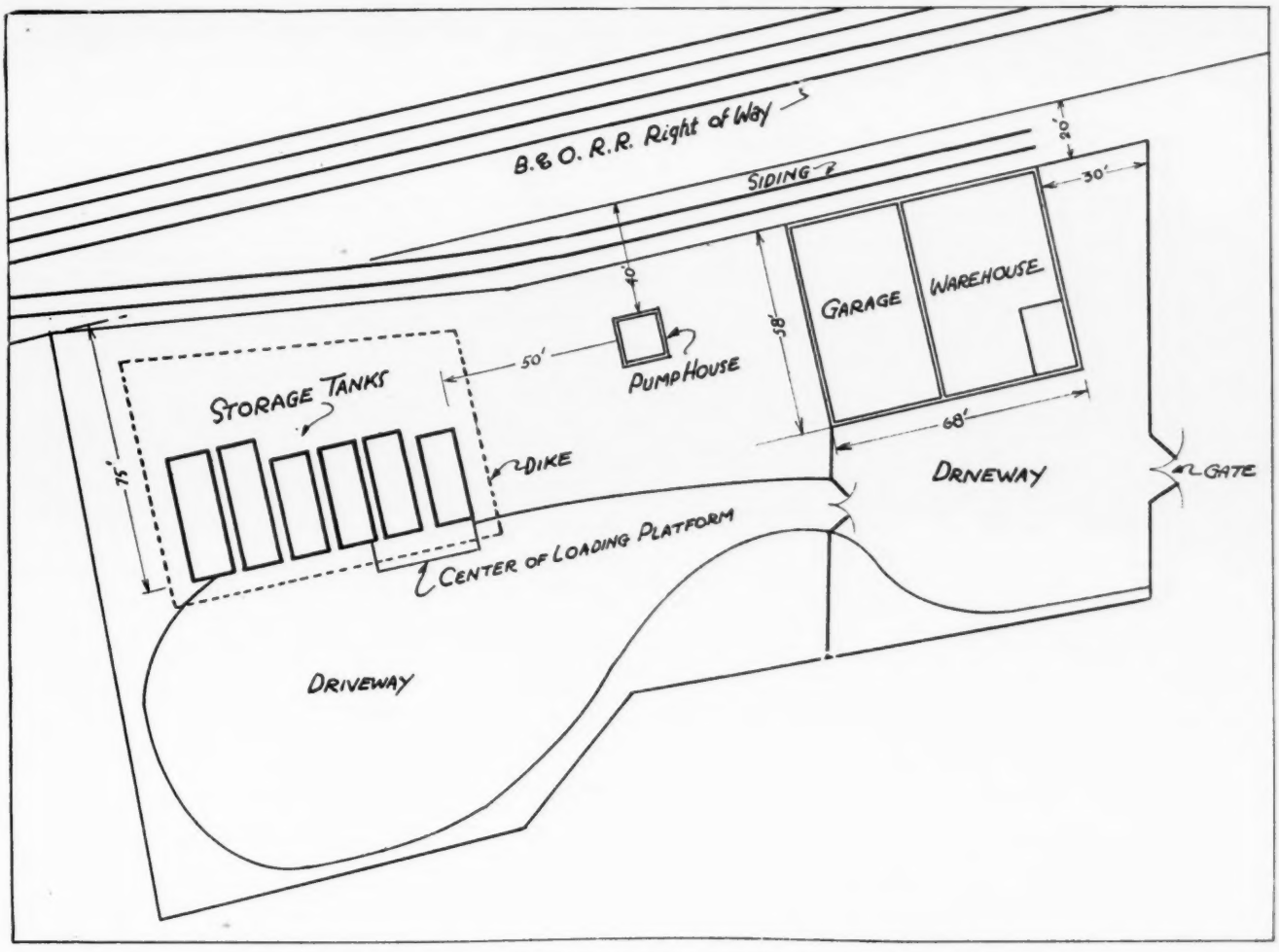
The pump house is a separate building, of brick to match the warehouse and with a single slab of concrete for the roof. The building houses a duplex Blackmer rotary pump, with capacity of 90 gallons per minute, gear driven from a 3-horsepower, single phase motor. The motor is set in a corner of the building enclosed in a sheet steel housing and the motor compartment is vented to the air, thus shutting the motor away from possible vapors.

THE tank car unloading lines are 3-inch diameter from the car to the pump. The pump intake is 2 inches and the lines from the pump to the storage tanks are 2½-inch. The oversize lines are to cut down friction and consequent excessive consumption of power in pumping.

All piping is carried about 18 inches off the ground on concrete supports, the bases of which are down about 3 feet in the ground, below the frost line. This exposed piping makes it easy to spot leaks if they develop.



Front elevation of the combination garage-warehouse at the Cities Service bulk plant



Ground plan of the layout of the Cities Service bulk station between Elyria and Lorain, O.

An ordinary gasoline pump, similar to the ones used at filling stations, sits in front of the pump house and all gasoline for driving the trucks is measured out through this pump. When the driver comes in with some gasoline left in his truck, it is gaged by the warehouseman, the driver is given credit and it is then dumped into the underground tank which supplies the pump.

With kerosene there is no handy tank into which the remainder of a load can be dumped from a truck, so there is a suction connection on the loading pump which can be hooked up to take suction from the truck and pump the surplus kerosene back into the big storage tank.

Three trucks are regularly operated out of this station, two having 800-gallon tanks and one a 1500-gallon tank. A stake truck, too, is used as needed. The ground making up the bulk plant yard is plentifully covered with crushed stone, which makes a good driveway for trucks, and the tanks, warehouse, pumphouse and loading rack are surrounded by a stout wire fence high enough to keep trespassers off the property.

One unusual feature of this station is that, as before stated, a good house came with it. This house stands just outside the wire fence which encloses the bulk plant. The house is rented and therefore bringing in some revenue to the Cities Service Oil Co. In addition to this, the presence of the house and its tenants has a discouraging influence on anyone who might be tempted to pilfer goods or meddle around the station.

E. C. Mackey, an engineer of the Crew Levick Co., Philadelphia, an allied concern, designed the station. Purchase of the station site and its construction were in the hands of J. W. McLarty, chief engineer of the Cities Service Oil Co. and the construction work was under the direct supervision of C. A. Chassin, engineer of the company.

The staff at the station is: one manager, one warehouseman, three drivers, one stake driver and handy man and one clerk.

With the exception of the manager, this staff was doubled when the two stations which the new one replaced, were operating. This crew is handling considerably more gallonage than was handled previously by the two crews at the two stations. A. J. Schmader is district manager.

HOUSTON, May 4.—Official announcement is made at El Paso of the sale to the Continental Oil Co., of Denver, of the jobbing and filling station business of the Calumet Oil Co., El Paso, for more than $150,000.

Middle Atlantic Jobbers Employ Overholser

CHICAGO, May 5.—R. A. Overholser, assistant to L. V. Nicholas while he was president of the Independent Oil Men of America, and before that secretary of the Wisconsin Independent Oil Jobbers Association, left Chicago on May 4 to become field secretary of the Independent Petroleum Marketers of the Middle Atlantic states.

The association is headed by R. C. Paul, Harrisburg Oil & Supply Co., Cameron and Paxton streets, Harrisburg, Pa. Mr. Overholser's work at the I.O.M.A. office has been taken over by Lou Harrington, the newly employed manager.

Discount on Coupon Books Reduced

LOUISVILLE, May 5.—The 2 per cent cash discount for a $10 gasoline coupon book was re-instated here on April 25 when the Standard Oil Co. of Kentucky and the Mid-Continent Petroleum Corp. discontinued the 10 per cent discount. Books are again sold for $9.80, instead of $9 which has been the case during the "price war."

The Stoll Oil Refining Co. followed the reduction in discount.

Q.D.A. Revised to Cut 1 Cent Off Chicago Dealers' Margin

Staff Special
CHICAGO, May 5

STANDARD OIL CO. of Indiana's famous quantity discount agreement is undergoing a slight revision.

It does not fit existing market conditions, having grown uncomfortably tight at strategic points. Chicago is one of the points and the change about to take place does not affect the system anywhere except in Chicago.

However, oil men here consider the local change indicative of things that may happen elsewhere—possibly over the whole territory.

Although no official announcement has yet been made, Standard is expected to abolish the practice of discounting the tank wagon price of gasoline one cent to buyers of 100 gallons or more at a single dump. This is supposed to take effect on May 8.

The net result is that the wholesale gasoline price will advance one cent on that date to all Chicago customers buying from tank wagon, whether for resale or not. The filling station price will remain where it is.

The reason for thus curtailing the dealer's margin is obvious. The retail price in Chicago is 16 cents a gallon. All retailers enjoy the regular two cent dealer's spread and a one-cent discount at the time of purchase for accepting 100 gallons or more at once, which all retailers are able to do. Then if they sell 15,000 gallons or more per month they are classified in the top bracket of the Q. D. A. and receive an additional 3 cents a gallon. In short, all the real worth while dealers in Chicago buy gasoline 6 cents under the retail price.

Although the published tank wagon price in Chicago is 14 cents, Standard actually realizes 10 cents a gallon on all the Red Crown gasoline sold to its biggest dealers. The same applies to all the big distributors and Independent jobbers in the Chicago market.

With U. S. Motor gasoline selling in Group 3 at 7.25 cents, freight of 2.38 cents and a .10 inspection fee, it costs 9.73 cents laid down in Chicago. This leaves the Chicago jobber approximately a quarter cent to do business on. Fortunately, that does not apply to all his business, but only to gallonage sold through big dealers.

But Chicago is a town of big dealers. More than half the drive-in filling stations in the city are privately owned. That is part of the reason for the "shoe pinching" in Chicago first. Aside from that Chicago is one of the cheapest gasoline markets in the country.

However anxious Standard Oil Co. executives might have been to shorten the dealers' margin, they did not start this movement. With nearby refineries operating on pipe line crude, Standard Oil Co., The Texas Co., Sinclair Refining Co. and Roxana Petroleum Corp., are better able to endure a 10-cent return on gasoline in Chicago than any jobber selling Group 3 goods.

The matter of abolishing the one-cent discount for 100-gallon dumps has been discussed among the smaller operators in Chicago ever since the Group 3 refinery price started up. A few suggested it to their dealers, but none had actually cut out the practice up to May 4. Nevertheless the jobber's margin had become so thin by that date that several declared the "dump concession" off for the following week.

Standard officials say they prefer to see the market go up rather than down and admitted on Saturday that they would follow the example of their competitors in abolishing one cent of the leader's margin. So it is virtually decreed that the maximum margin a dealer can have under the Q. D. A. in Chicago after May 8 will be 5 cents a gallon.

Sinclair Returns Bonds To Buying Company

WASHINGTON, May 7.—Harry F. Sinclair appeared before the Teapot Dome investigating committee May 1 and admitted that he received one-fourth of the profit of the Continental Trading Co. He would not, however, admit that the profit was paid with the bonds of the trading company which have been discussed so much the last few years. All he knew, he said, was that H. M. Blackmer gave him packages sometimes by messenger and sometimes he delivered the packages in person.

When his attention was called to a declaration by Martin W. Littleton, his counsel, made a few weeks ago to the jury in the conspiracy trial that the defense would show that Sinclair did not pass Continental bonds to Fall, he had no comment to make except to say that that was the declaration of his counsel. However, he insisted that he did not know that the bonds he received were the Liberty 3½s the trading company had bought with its profits.

Littleton, who, with other attorneys for Sinclair, sat at Sinclair's elbow challenged the right of the committee to raise questions between Sinclair and his attorney. Senator Walsh disagreed with Littleton but when he again asked the question with a view to having Sinclair comment on the case Sinclair said he had no comment to make. He insisted that he did not know whether the bonds were those the Continental Trading Co. passed out. He said he had other bonds.

Sinclair revealed that after his acquittal he had turned all the bonds he received over to the Sinclair Crude Oil Purchasing Co., together with $142,000 in interest on the theory that the bonds and the interest belonged to the company on behalf of which, subject to the approval, he said, of the directors of that company, he had guaranteed the performance of the Continental's contract to buy 33,333,333 barrels of crude from the Humphreys interests.

As the matter now stands all the profits have been returned or offered to be returned to the companies of which the participants in the Continental deal were officers.

According to newspaper reports the Midwest Refining Co. has voted not to accept the bonds from Blackmer, who was its chairman, on the ground that it was not entitled to the money.

The committee has not found any reason for the organization of the trading company and the buying of the oil covered by the contract by the Prairie Oil & Gas Co. and Sinclair through an intermediary instead of directly. Sinclair treated the matter from the same angle Stewart occupied when he testified on the subject; namely, that the purchase was an advantageous one from which the companies made a good profit.

Late Tank Wagon Changes

(By Telegraph)

LOUISVILLE—On May 7 Standard Oil Co. of Kentucky advanced tank wagon and service station prices of gasoline 1 cent generally in Mississippi, Alabama, Georgia and Florida. Tank wagon in state of Kentucky is unchanged. Last previous change was an advance of 1 cent upward on April 2. Prices are not corrected to show this advance in the tank wagon table on page 125 of this issue.

NEW ORLEANS—On May 7 Standard Oil Co. of Louisiana advanced tank wagon and service station prices of gasoline 1 cent generally through eastern Tennessee. Included in this advance was Knoxville where tank wagon became 20 cents, and service station 22 cents, including 3 cent state tax. Chattanooga was raised ½-cent, making tank wagon 19.5 cents and service station 21.5 cents, including tax.

Tank wagon in Louisiana and Arkansas remained unchanged. Tennessee prices are not corrected in the tank wagon table on page 125 of this issue.

Adopt Gas Conservation on Individual Properties, Operators Are Asked

A view of a portion of the Ventura pipe line system of the Union Oil Co. at South Mountain, Ventura County, California

LOS ANGELES, May 4

CALIFORNIA oil operators are being asked by the department of oil of the state mining bureau to individually adopt methods to conserve gas production. This is a part of the general program of gas conservation in this state.

Operators are being asked to measure the production of gas from each individual well and report it monthly to the state oil and gas supervisor, in addition to the production of oil and water which is now reported.

"If it is not possible to furnish individual well productions, the amount of gas by leases or groups of wells should be reported," State Supervisor R. D. Bush wrote all oil producers April 30. "This information will be treated in the same manner as all other records filed with this department."

There is being sent to all producers also a pamphlet, "How to Increase Oil Recovery and Conserve Gas in the Field," the material for which was prepared by the subcommittee to the California operators' general committee on gas conservation. This general committee was appointed a few months ago at the suggestion of Governor Young to work out methods by which the oil industry might effect greater gas conservation.

The fact that cooperative operating agreements cannot be entered into in oil producing areas should not deter operators individually from considering the application to their own properties of methods which have been proven to increase recovery efficiency, says the report.

"Application of these measures by a large number of operators in California would result in adding to the oil resources of the state, through greater extraction from the sands, and would also reduce surplus gas, which, because of limited markets, may have to be wasted."

The report points out that the amount of back pressure that can be held on individual wells, without resulting in migration of oil from one operator's property to another, depends on such factors as the distance between wells, the character of the oil sands, and the reservoir pressure. It goes on to say that, in many cases, the individual operator would be justified in increasing his own well pressures in order to save gas and increase his ultimate oil recovery, even though his neighbor were not farsighted enough to join in the movement.

Control of gas-oil ratios on individual flowing wells is discussed as follows.

"In fields handled under cooperative operating plans, such as those at Ventura, or on fairly large single leases, operators should close in wells that produce with exceptionally high gas-oil ratios. However, if for any cause it is necessary to operate all wells on a lease, operators should experiment with individual wells in order to operate them at the lowest possible gas-oil ratios.

Handling Flowing Wells

"Practically all operators in California install tubing during the completion of a well for the purpose of flowing the well through it. This practice is strongly indorsed. The size of the tubing and the best tubing depths are matters that, theoretically, should be varied during the flowing life of a well.

"However, since it is not practicable to kill flowing wells to change tubing size or depth during the period when they are flowing at high pressure, it is necessary to tube wells in such a manner that they will operate satisfactorily both during the high pressure stages and later as the pres-

sures decline and the well approaches the gas lift stage.

"Experience has shown that large flowing wells which are draining oil sands of high gas pressure can be flowed most efficiently when comparatively high back pressures are held on the oil sands. For this reason, instead of tubing wells with extra large flow strings to obtain the maximum possible production during the high-pressure stage, the better policy is to tube wells which are expected to flow at a high rate with a tubing of a size that will be useful during the later flowing and gas lift periods, as for example 2½-inch.

"Although large flowing wells will probably flow satisfactorily when tubed at some point above the top of the perforations, still these same wells will later flow more efficiently if tubed at some point below the top of the perforations. If they are so equipped at the beginning they will not be penalized during the high pressure stages, because the tubing will help to hold the necessary back pressure, but they will be equipped for efficient flowing later on.

"Most California operators flow large wells against beans, which increase the effective back pressure on the oil sands. This practice is also highly recommended. Comparatively high back pressures on flowing wells are necessary in California fields as a safeguard against collapse of casing and sanding up; high back pressures also tend to prevent irregular water encroachment through porous sands or the breaking of water shut-offs.

"Regulated back pressures are as important in controlling gas-oil ratios as in safeguarding the mechanical features of a well. As mentioned earlier in this paper, the one really important factor in controlling gas-oil ratios is the regulation of back pressure held against the producing sand. This pressure varies throughout the life of a well, and from well to well, and can be found only by experimenting.

"In the Ventura field, where large flowing wells of high pressure and high gas-oil ratio are common, operators have learned that back pressures of as much as 1000 to 1200 pounds per square inch are conducive to lowest gas-oil ratios. In fact, it has been established that the gas-oil ratios of Ventura wells can usually be controlled by proper adjustment of back pressures where the mechanical condition of the well makes such adjustment possible."

Regulating the gas pressure on gas-lift wells is just as important as controlling it on flowing wells, states the report, although many operators have thought that the successful operation of gas-lift wells consisted in flowing them in such a manner as to obtain the greatest possible present daily oil production.

The report says that records show that, when the gas lift is applied without regard to the degree of back pressure necessary for efficient oil recovery and only for the purpose of obtaining a large present increase in oil production, the results are usually a large increase in gas-oil ratio and a rapid decline in oil production.

Handling Pumping Wells

The report goes into the control of gas-oil ratios in pumping wells, stating that the application of gas-oil ratio control to a large group of pumping wells would undoubtedly result in a greatly increased oil production and a substantial decrease in gas production and, therefore, gas surplus.

"There are several thousand pumping wells in the state of California which together produce a large quantity of natural gas," states the report on this phase of gas-oil ratio control.

"With the exception of a few wells that have been subjected to experimental work, these pumping wells produce without any attempt being made to control their gas production. However, the experimental work indicates that, many times, very substantial reduction in gas production can be made by proper control of back pressures. Frequently this control can be applied without serious loss in present daily oil production and with a resultant arrested decline which will be reflected in increased oil recovery.

"Back pressure on a pumping well can be regulated either by means of a tight casinghead, making possible the holding of gas pressure on the casing, or by means of adjusting the tubing depth. The tubing depth method of controlling gas-oil ratios may be effective, but is more difficult to apply than the holding of gas pressure on the casing, because changing tubing depth does not permit the operator to know the exact amount of change in back pressure on the sands.

"Also, every change of back pressure by this method involves removing the well-head fittings and actually raising or lowering the tubing. Adjustment of back pressure by means of gas pressure in the casing may be obtained simply through the operation of a valve or the use of a flow bean on the blow-off line from the casinghead. A pressure gauge on the casing gives a direct measurement of the change in back pressure.

"The holding of gas pressure on the casinghead frequently causes trouble through gas-locking of the pumping valves, a difficulty which, unless it is detected and overcome, may result in abnormally low oil production, because the pump will not pump down the fluid that has entered the well. This causes low daily oil production because of the failure of the pump to lift steadily and because the fluid level will rise and exert a greater back pressure on the sands than that indicated by the pressure gauge on the casing.

"Experienced production men readily detect gas-locking and correct it by means of gas anchors, by spacing the pump valves, and by other measures. However, unless this gas-locking is detected and corrected, low daily oil production may lead to erroneous conclusions regarding the actual potential production of the well against a given back pressure."

Jones Appoints W. P. R. A. Standing Committees

TULSA, May 7.—Roy B. Jones, president of the Panhandle Producing and Refining Co., Wichita Falls, newly elected president of the Western Petroleum Refiners Association, has announced the following committee appointments for that organization. Those appointed will serve until the annual meeting next spring.

Manufacturing Committee

L. R. Crawford, Producers & Refiners Corp., chairman.
R. A. Frevert, Lubrite Refining Co.
H. W. Camp, Empire Oil & Refining Co.
Walter Miller, Marland Refining Co.
J. M. Wadsworth, Independent Oil & Gas Co.
Dr. E. R. Lederer, Texas Pacific Coal & Oil Co.
C. R. McKay, Pierce Petroleum Corp.
F. E. Wellman, Manhattan Oil Co.
W. F. Simms, Panhandle Refining Co.
F. E. Holsten, Barnsdall Refineries, Inc.
Dr. F. W. L. Tydeman, Roxana Petroleum Corp.
B. P. Crittenden, Louisiana Oil Refining Corp.
M. E. Foster, Phillips Petroleum Co.
R. J. Black, Sinclair Refining Co.
R. C. Osterstrom, Pure Oil Co.
C. R. Barton, Tidal Refining Co.

Finance Committee

E. W. Goebel, Manhattan Oil Co., chairman.
George D. Locke, Barnsdall Refineries, Inc.
M. J. Grogan, Louisiana Oil Refining Corp.

Traffic Committee

F. A. Pielsticker, Skelly Oil Co., chairman.
A. C. Holmes, Empire Oil & Refining Co.
F. H. Walker, Shreveport Producing & Refining Corp.
B. J. Burchett, Shaffer Oil & Refining Co.
E. W. Sieboldt, Roxana Petroleum Corp.
A. F. Winn, Skelly Oil Co.
L. R. Cowles, White Eagle Oil & Refining Co.

Credit and Accounting

R. R. Irwin, White Eagle Oil & Refining Co., chairman.
Emery Burnett, Continental Oil Co.
W. Z. Brown, Producers & Refiners Corp.
M. D. Creel, Marland Refining Co.
J. M. Judson, Sinclair Refining Co.
F. H. Bowman, Pure Oil Co.
H. W. Bottomfield, Transcontinental Oil Co.
M. A. Chambers, Panhandle Refining Co.
H. M. Edinger, Barnsdall Refineries, Inc.
Chas. Klein, Mid-Continent Petroleum Corp.
A. J. Ahlum, Crystal Oil Refining Corp.

Marketing Committee

R. R. Irwin, White Eagle Oil & Refining Co., chairman.
D. W. Moffitt, Mid-Continent Petroleum Corp.
J. B. Atkins, Shreveport Producing & Refining Corp.
John McE. Ames, Kanotex Refining Co.
C. L. Henderson, Vickers Petroleum Co.
G. W. Reed, Panhandle Refining Co.
L. R. Crawford, Producers & Refiners Corp.

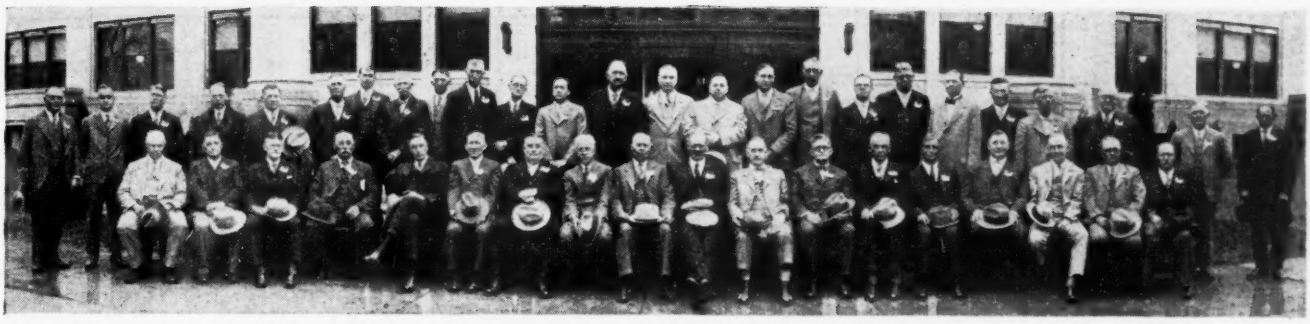
Legislative Committee

P. M. Miskell, Empire Oil & Refining Co., chairman.
J. C. Denton, Mid-Continent Petroleum Corp.
E. W. Goebel, Manhattan Oil Co.
Frank M. Smith, Oriental Oil Co.
D. P. Hamilton, Root Refineries, Inc.

Membership Committee

George D. Locke, Barnsdall Refineries, Inc., chairman.
F. W. Burford, Crystal Oil Refining Corp.
John L. Gray, Shaffer Oil & Refining Co.
A. F. Garrett, Tidal Refining Co.
E. D. Levy, Pierce Petroleum Corp.

SAN FRANCISCO, May 4.—Standard Oil Co. of California declared ninth regular quarterly dividends of 62½ cents a share on the common stock payable June 15, to stockholders of record May 15.



"Jewel men" of the Prairie Oil & Gas Co. and allied companies, who have been continuously in its service for 20 years or more, were recently honored by the company. Nelson K. Moody, president of the company, who has 28 years' service to his credit is fifth from the left in the group that is seated

Forty-Nine Prairie Men Honored

TULSA, May 5

THERE seems to be a distinctive air of friendliness about the offices of the Prairie Oil & Gas Co. and the Prairie Pipe Line Co. in Independence, Kans.

Perhaps this is due to the size of the headquarters town. Unlike many a big corporation, the Prairie has elected to stay all these years in a quiet little city, where life lacks much of the complexity and rush of big cities.

Perhaps, again this friendly air is not occasioned altogether by the character of the town, but by an intangible something in the company's policy. There must be something wholesome about the policy, else why would the personnel remain so constant year after year?

The recent awarding of pins to its "jewel men" by the Prairie Oil & Gas Co. brought to light 49 men who have been continuously in the company's service for 20 years and longer. These were summoned to a luncheon at which the awards were made.

There are, of course, a host of employes who have been with the company for 10 years and more. Service pins of different design have been conferred on those in the 10 to 15-year group and the 15 to 20-year class. The luncheon and ceremonies were arranged for the 20-year and longer class, however.

The intimate relationship of the Prairie companies to Independence was set forth by figures in a little booklet prepared by the Prairie Oil & Gas Co. It said that the Prairie Oil & Gas Co. has 284 employes living in Independence; the Prairie Pipe Line Co. has 182 and the Producers & Refiners Corp., controlled by the Prairie Oil & Gas Co., has 77. All the officers and directors of the Prairie Oil & Gas Co. and the Prairie Pipe Line Co. live in Independence, except one with the pipe line company, who lives in Tulsa. The payroll of the three companies to Independence-dwelling employes totals $1,562,000 yearly.

Forms of company aid to employes: All three corporations carry insurance policies on every regular employe, payable to his family at death, without cost to the employe.

All three corporations have annuity plans, under which employes are retired at specified ages after serving a certain number of years. Such retired employes receive percentages of their last year's salary up to 75 per cent, depending upon years of service.

The Prairie Oil & Gas Co. has a stock participation plan, under which every regular employe may contribute 15 per cent of his salary, to which the company adds one-third, the total being applied to the purchase of company stock at the market price. This plan has been in effect for three years and several hundred employes are taking advantage of the offer. Of the eligible employes in Independence, the company says 100 per cent are participating.

The Prairie Oil & Gas Co. is the largest buyer of high grade crude oil in the world. Since 1903 it has bought nearly a billion barrels and it sends an average of 1000 checks each day in payment. It bought more than 64,000,000 barrels of oil in 1927.

The production owned by the Prairie Oil & Gas Co., its subsidiary Prairie Oil & Gas Co. of Wyoming and the Producers & Refiners Corp. in 1927 amounted to more than 27,000,000 barrels. On one day early last year the gross production of the three companies was 100,000 barrels. The company owns steel tankage amounting to about 50,000,000 barrels capacity and in 1927 it estimates that it absorbed about 18 per cent of the overproduction of the entire United States.

The Prairie Pipe Line Co., which has the largest pipe line system in the world, is a corporation separate from the Prairie Oil & Gas Co. but the greater part of its receipts of oil from producing properties is oil either produced by the Prairie Oil & Gas Co. or purchased by that company. Prairie Pipe Line Co. has more than 12,500 miles of line and its gathering lines are connected to about 42,000 wells, or approximately 40 per cent of all the producing wells in Kansas, Oklahoma and North Central Texas.

> ***"It ain't the individual***
> ***Nor the army as a whole,***
> ***But the everlastin' team work***
> ***Of every bloomin' soul."***
>
> Quoting from Kipling, on the menu card of the "Jewel Men" luncheon.

Prairie's "Jewel Men"

30 Years Service or More

W. W. Pilkington, 46, retired.
Michael Dougherty, 45, superintendent.
W. F. Hannon, 42, district foreman.
Hugh S. Copus, 39, district foreman.
Hugh C. O'Neil, 37, superintendent.
Charles H. Oles, 35, general auditor.
Jacob O. Wiles, 35, retired.
John H. Schumaker, 34, pumper.
Crayton Bates, 33, purchasing agent.
Harold W. Peck, 32, chief clerk.
James H. Hennon, 30, driller.

25 Years Service or More

Monroe Stephens, 29, district foreman.
John O. Stewart, 29, district foreman.
Nelson K. Moody, 28, president.
A. B. Hookins, 27, treasurer.
W. H. Love, 27, attorney, land department.
John W. Smith, 27, superintendent.
William C. Jenkins, 27, roustabout.
John M. Peck, 26, pumper.
Jonah E. Bryson, 25, pumper.

20 to 25 Years Service

Francis E. Fertig, 24, cashier.
John C. Kiddoo, 24, gauger.
James T. Gray, 24, district foreman.
Oscar F. Glover, 24, district foreman.
Charles R. Walts, 23, superintendent.
John A. Hollihan, 23, secretary.
Frank L. Hicks, 23, retired.
Clyde Inscho, 23, chief clerk.
Charles E. Vickers, 23, district foreman.
Miles M. Mullen, 23, iron worker.
James W. Smith, 22, clerk.
John Fertig, 22, v. p. and g. m. Producers & Refiners Corp.
Everett E. Tanquary, 22, clerk.
Colin J. Macfarlane, 22, pumper.
Lloyd A. Buchanan, 22, clerk.
James F. O'Donnell, 22, district foreman.
John A. Wolfe, 21, superintendent.
Ora E. Garretson, 21, treasurer, Prairie Oil & Gas Co. of Wyoming.
Franklin S. Gray, 21, land department.
William E. Clingan, 21, district foreman.
William H. Brown, 20, clerk.
William E. Pearce, 20, warehouse foreman.
Curtis B. Goodyear, 20, gauger.
Daniel H. McCarthy, 20, district foreman.
W. V. Heckman, 20, assistant treasurer.
Charles Martin, 20, head roustabout.

The Editors' Viewpoint

National Petroleum News

A Colossal Industry

THE oil industry truly carries on its operations on a colossal scale.

Even one familiar with its operations is impressed, in studying the financial reports of its principal companies, with the size of its undertakings in all branches.

Last year was one in which all companies suffered through overproduction and the consequent intense competition to dispose of refined products. Earnings were greatly reduced, in most cases, from the year preceding.

Retrenchments were in order, to cut the cloth—operations—to the new pattern—low prices and narrower margins on which to do business.

Yet glance at some of the sums that were spent by a few of the big companies to revamp their refineries, acquire new oil lands, and in other ways put themselves in a position to operate profitably in the future.

The Gulf Oil Corp., in 1927, through its subsidiaries, spent $67,000,000 on new leases, enlargement of pipe line facilities, completion of refineries, new storage and increase in bulk and retail stations.

Sun Oil Co., spent $7,000,000 on plant expansion in 1927.

The Texas Corp., showed an increase of $38,000,000 in its property account; $24,000,000 in oil lands and leases; over $6,000,000 in refinery and terminals; about the same amount in marketing facilities.

California Petroleum Corp. spent $15,000,000 on property and expansions.

Humble Oil & Refining Co. increased its property account nearly $35,000,000.

Barnsdall Corp., up to the close of 1927, spent $11,000,000 and over on its Seminole field operations alone, over about 18 months.

Standard Oil Co. of California increased its plant account $19,000,000, $10,000,000 for producing activities, the balance in other branches of its activities.

Here is a total of nearly $200,000,000 for seven companies, a large part of it representing actual capital outlay for new properties, buildings and equipment. Figures for other companies would be equally impressive.—V. B. G.

Sold but Not Delivered

SUPPOSE the secretary of a state oil jobbers' association should advise his members to buy their gasoline from one certain refiner because that refiner had agreed to make a special price to association members. Would the jobbers follow the secretary's suggestion? They would not. A few might, but not enough to repay the refiner for the grief he would get from other customers.

Suppose the president of an association which embraces some 500 owners of single filling stations in Chicago should instruct his members to buy from one certain jobber because that jobber promised to give association members a special rebate. Would the members all buy from that jobber? They would not. Those who were already patronizing him would take the rebate, that's about all.

But when the secretary of a motor club offers an oil man the loyal patronage of his members if the oil man will make his members a special price concession, what happens? The oil man listens to the secretary instead of showing him the door. Sometimes the oil man and the club secretary come to an agreement on a cut price basis—special price to club members.

Every oil man should know from his own experience that people buy where they please. A club secretary may talk about the patronage of his members as if they were his and he could sell them down the river, but he can't. If an oil man makes a special price to a certain club, members of that club who are already his customers will enjoy the new price. He will not see many of the others.—W. K. H.

Study of Oil Field Waters

INCREASING attention is being given to the chemical characteristics of oil field waters found in association with petroleum deposits. Although it is impossible to eliminate "edge water," the production of oil may be aided frequently by preventing intrusions from other sources.

In order to do this successfully it is necessary to identify the different waters by laboratory analyses and then use whatever means may be necessary to make proper shut-offs in wells. The making of water analyses is a branch of petroleum engineering that has made considerable progress but which may be profitably pursued to a much greater extent than now practiced.—P. W.

What's a Cent a Gallon?

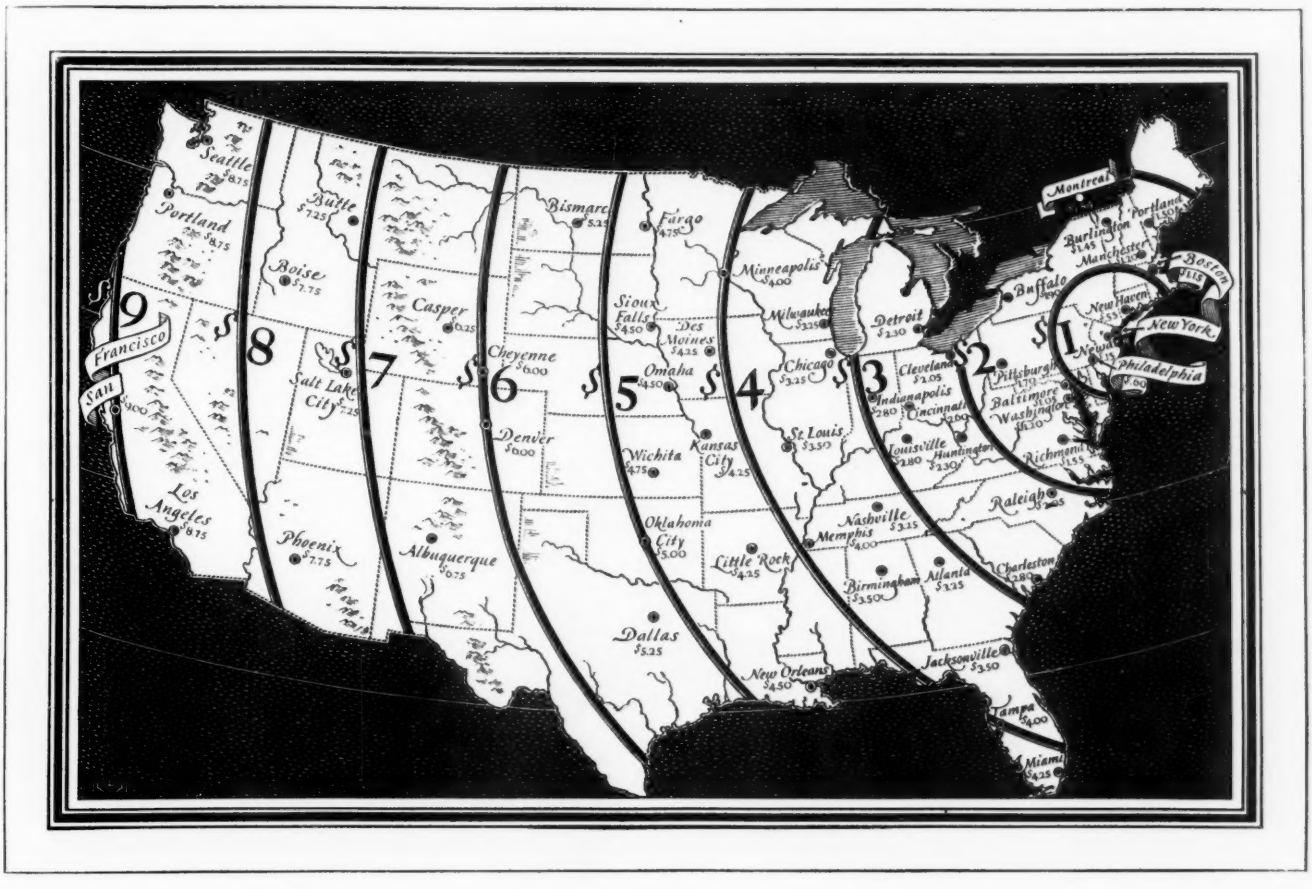
TO THOSE marketers who are careless with their pennies, the 1927 financial statement of the Standard Oil Co. of Indiana may contain a lesson. This company didn't do so bad last year. It netted 13 per cent on its capital stock and 7.3 per cent on its total invested capital —not a bad rate for such a year as 1927.

But the $30,132,456 the Standard of Indiana netted did not cover the dividend it paid, although the dividend rate was the same as it was in 1926. The company sold a million and a half barrels more goods last year than in 1926, yet its net earnings were $25,000,000 less last year.

Volume of Standard of Indiana sales last year was 33,131,975 barrels. If only 30 per cent of this was gasoline, the volume of gasoline sales would have been 417,462,885 gallons. At 1 cent a gallon more for its gasoline than it received, it would have received $4,174,628.85 more than it did. This sum would have given the company a surplus after its dividends as large as the amount it had to take from previously earned surplus to complete its dividends.

To a jobber handling only a tank car of gasoline a week over the year, an additional 1 cent a gallon would have meant $5000 additional income.—R. B. S.

Coast to Coast now only $9.00
Cleveland to Pittsburgh 80¢



An Advertisement for Bell Long Distance Telephone Service

THE station to station day rate for the longest telephone call you can make within the United States is now only $10.00. From San Francisco to New York is only $9.00. From St. Louis to Chicago is only $1.45. From Newark to Philadelphia is only 60 cents.

An average of 2,614,000 toll and long distance calls are now handled daily by the Bell System. The purchasing agent of a large western manufacturer called his general storekeeper from New York, 2800 miles away. He secured information that enabled him to make a purchase saving his firm $250,000.

The Cheyenne, Wyoming, manager of a farm machinery house made seven long distance calls to Nebraska and Colorado points. Within an hour's time he sold 25 threshers for $50,000.

A Missouri fruit company calls each of its dealers at regular intervals and gets their orders by Long Distance.

The time and money saved by Long Distance is summed up by a Chicago lumberman. He says: "The toll to Milwaukee is 80 cents. Average cost of making the trip, $10.00. Detroit toll is $1.80. A trip would cost $25.00 or more."

What long distance calls can you profitably make now? You will be surprised how little they will cost. . . . Calling by number takes less time. . . . . *Number, please?*

AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES — BELL SYSTEM

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended May 4 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended May 4	Total Week Ended Apr. 6
Plants Reporting	12	28	28	12	80	79
Crude Capacity (bbls.)	92,000	157,200	112,500	54,900	416,600	408,600
Cracking Capacity	30,700	52,600	16,200	22,700	122,200	122,200
Da. Av. Crude Runs	58,371 — 0.4	105,566 — 4.7	76,066 + 0.7	57,089 + 12.5	297,092 + 0.5	279,245
Da. Av. Other Oils	9,063 + 73.1	2,330 + 53.5	7,970 + 85.4	139	19,224 + 77.2	13,268
GASOLINE—Gallons						
Stocks, Apr. 27	12,216,000	60,295,000	17,556,000	4,999,000	99,066,000	101,985,000
Prod. 4-27 to 5-4	9,882,000 + 4.2	16,013,000 — 9.7	8,190,000 — 3.8	5,242,000 + 11.7	38,437,000 — 2.9	35,578,000
Ship. 4-27 to 5-4	9,347,000 — 1.0	17,615,000 — 4.5	8,761,000 — 16.6	5,073,000 + 14.7	40,796,000 — 4.7	37,927,000
Stocks, May 4	15,861,000 — 2.2	58,693,000 — 2.7	16,985,000 — 5.4	5,168,000 + 3.4	96,707,000 — 2.4	99,636,000
Ratio Sales to Prod.	103.9%	110.0%	107.0%	96.8%	106.1%	106.6%
KEROSENE—Gallons						
Stocks, Apr. 27	3,725,000	4,034,000	1,653,000	719,000	10,131,000	11,110,000
Prod. 4-27 to 5-4	1,809,000 + 8.6	2,421,000 — 19.5	1,530,000 — 1.8	406,000 — 13.8	6,166,000 — 8.0	5,911,000
Ship. 4-27 to 5-4	1,453,000 — 26.1	2,963,000 — 3.5	1,663,000 + 5.3	621,000 +153.5	6,700,000 — 2.4	7,245,000
Stocks, May 4	4,081,000 + 9.6	3,492,000 — 13.4	1,520,000 — 8.0	504,000 — 29.9	9,597,000 — 5.3	9,776,000
Ratio Sales to Prod.	80.3%	122.4%	108.7%	153.0%	108.7%	122.6%
STOVE DISTILLATE—Gallons						
Stocks, Apr. 27	1,306,000	2,057,000	659,000	89,000	4,111,000	5,131,000
Prod. 4-27 to 5-4	329,000 + 37.7	341,000 + 4.3	140,000 +141.4	100,000 — 31.5	910,000 + 18.2	1,038,000
Ship. 4-27 to 5-4	210,000 — 44.4	594,000 + 31.1	566,000 + 83.2	120,000 0	1,490,000 + 18.3	1,156,000
Stocks, May 4	1,425,000 + 9.1	1,804,000 — 12.3	233,000 — 64.6	69,000 — 22.5	3,731,000 — 14.1	5,013,000
Ratio Sales to Prod.	63.8%	174.2%	404.3%	120.0%	163.7%	111.4%
GAS OIL—Gallons						
Stocks, Apr. 27	6,505,000	30,869,000	3,908,000	5,421,000	46,703,000	50,597,000
Prod. 4-27 to 5-4	1,631,000 + 2.3	2,340,000 + 51.8	1,836,000 +117.0	1,749,000 + 8.0	7,556,000 + 34.9	9,530,000
Ship. 4-27 to 5-4	1,396,000 + 10.4	3,043,000 + 63.8	2,502,000 +105.8	2,094,000 + 35.9	9,035,000 + 53.7	11,340,000
Stocks, May 4	6,740,000 + 3.6	30,166,000 — 2.3	3,242,000 — 17.0	5,076,000 — 6.4	45,224,000 — 3.2	48,787,000
Ratio Sales to Prod.	85.6%	130.0%	136.3%	119.7%	119.6%	119.0%
FUEL OIL—Gallons						
Stocks, Apr. 27	13,810,000	33,674,000	34,969,000	19,857,000	102,310,000	97,248,000
Prod. 4-27 to 5-4	6,638,000 + 3.0	7,265,000 — 13.2	10,996,000 + 8.3	8,319,000 + 13.7	33,218,000 + 2.9	27,828,000
Ship. 4-27 to 5-4	6,174,000 — 20.3	6,168,000 — 20.7	11,478,000 — 3.0	8,104,000 + 30.9	31,924,000 — 4.9	27,419,000
Stocks, May 4	14,274,000 + 3.4	34,771,000 + 3.3	34,487,000 — 1.4	20,072,000 + 1.1	103,604,000 + 1.3	97,657,000
Ratio Sales to Prod.	93.0%	84.9%	104.4%	97.4%	96.1%	98.5%

Gasoline Produced by Various Methods, Week Ended May 4

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,694,000	63.3	11,689,000	73.0	6,119,000	74.7	2,180,000	41.6	25,682,000	66.8
Cracked	2,618,000	29.1	3,444,000	21.5	1,718,000	21.0	2,474,000	47.2	10,254,000	26.7
Natural	680,000	7.6	880,000	5.5	353,000	4.3	588,000	11.2	2,501,000	6.5
Total	8,992,000		16,013,000		8,190,000		5,242,000		38,437,000	

+ or — columns are % change from previous week.

Stocks of Major Products Except Fuel, Are Lowered

Staff Special—By Telegraph
TULSA, May 8

STOCKS of all principal commodities except fuel oil were reduced at 80 refineries in the Mid-Continent field in the week ended May 4. The increase in fuel oil stocks was not large.

Gasoline shipments were well above 40,000,000 gallons and stocks were reduced 2,359,000 gallons to 96,707,000 gallons. At the current rate of shipment gasoline stocks now are approximately 17 days' supply. A year ago the same group of plants held in storage 98,971,000 gallons. Shipments in the corresponding week last year totaled 35,452,000 gallons.

Oklahoma refiners reported the largest draft on stocks, 1,600,000 gallons, bringing reserves down to 58,693,000 gallons. The Louisiana-Arkansas group reported a small in-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 4. Change in stocks figured from April 6.

GASOLINE

	Gallons
Production	159,386,000
Shipments	162,315,000
Net change in stocks	—2,929,000
Ratio sales to production	101.8%

KEROSENE

Production	26,808,000
Shipments	26,987,000
Net change in stocks	—179,000
Ratio sales to production	100.7%

STOVE DISTILLATE

Production	3,380,000
Shipments	4,862,000
Net change in stocks	—1,482,000
Ratio sales to production	143.8%

GAS OIL

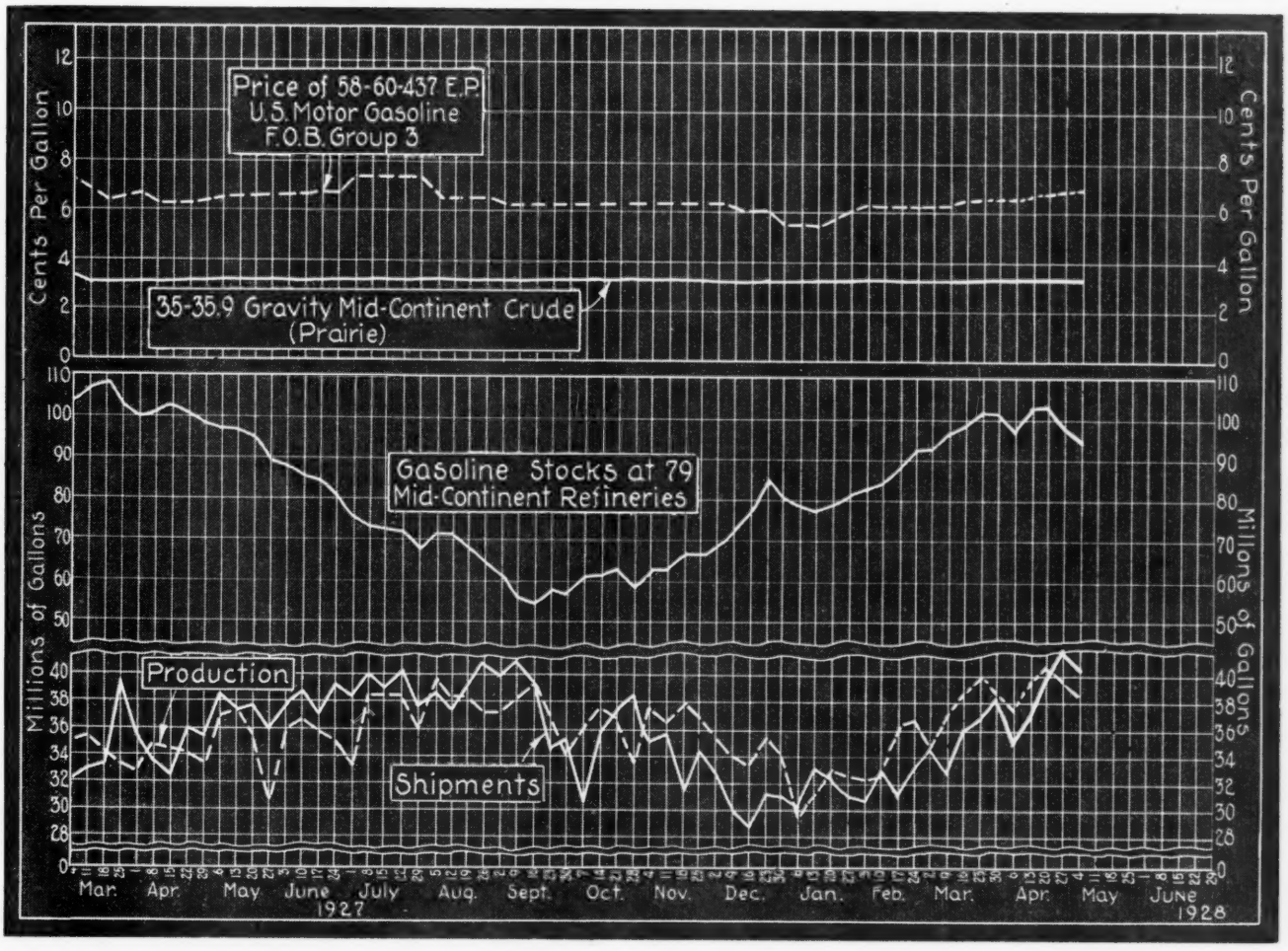
Production	25,005,000
Shipments	28,568,000
Net change in stocks	—3,563,000
Ratio sales to production	114.2%

FUEL OIL

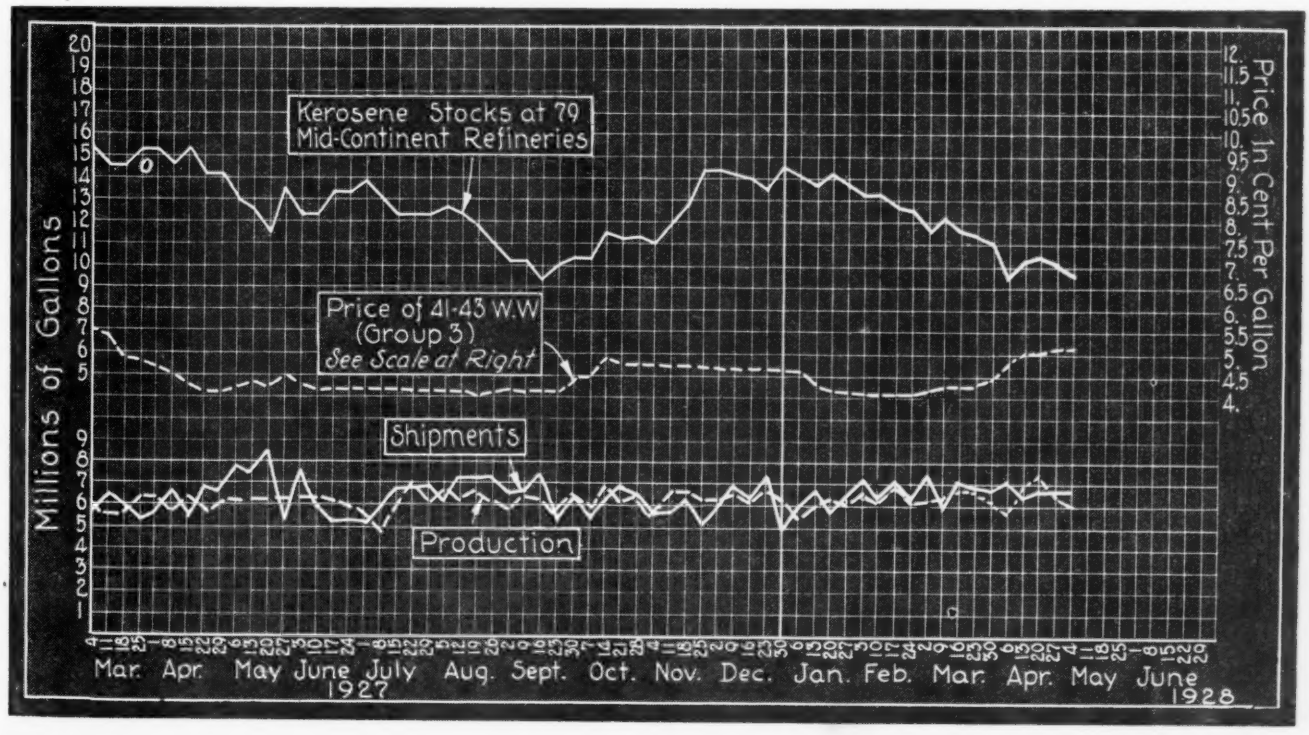
Production	129,973,000
Shipments	124,026,000
Net change in stocks	+5,947,000
Ratio sales to production	95.4%

Barometer of Mid-Continent Refinery Market—Week Ending May 4

***Charted Course of Prices, Production, Shipments, Stocks of Principal R** fined Products, Week by Week, From Reports Made by 80 Plants to National Petr oleum News*

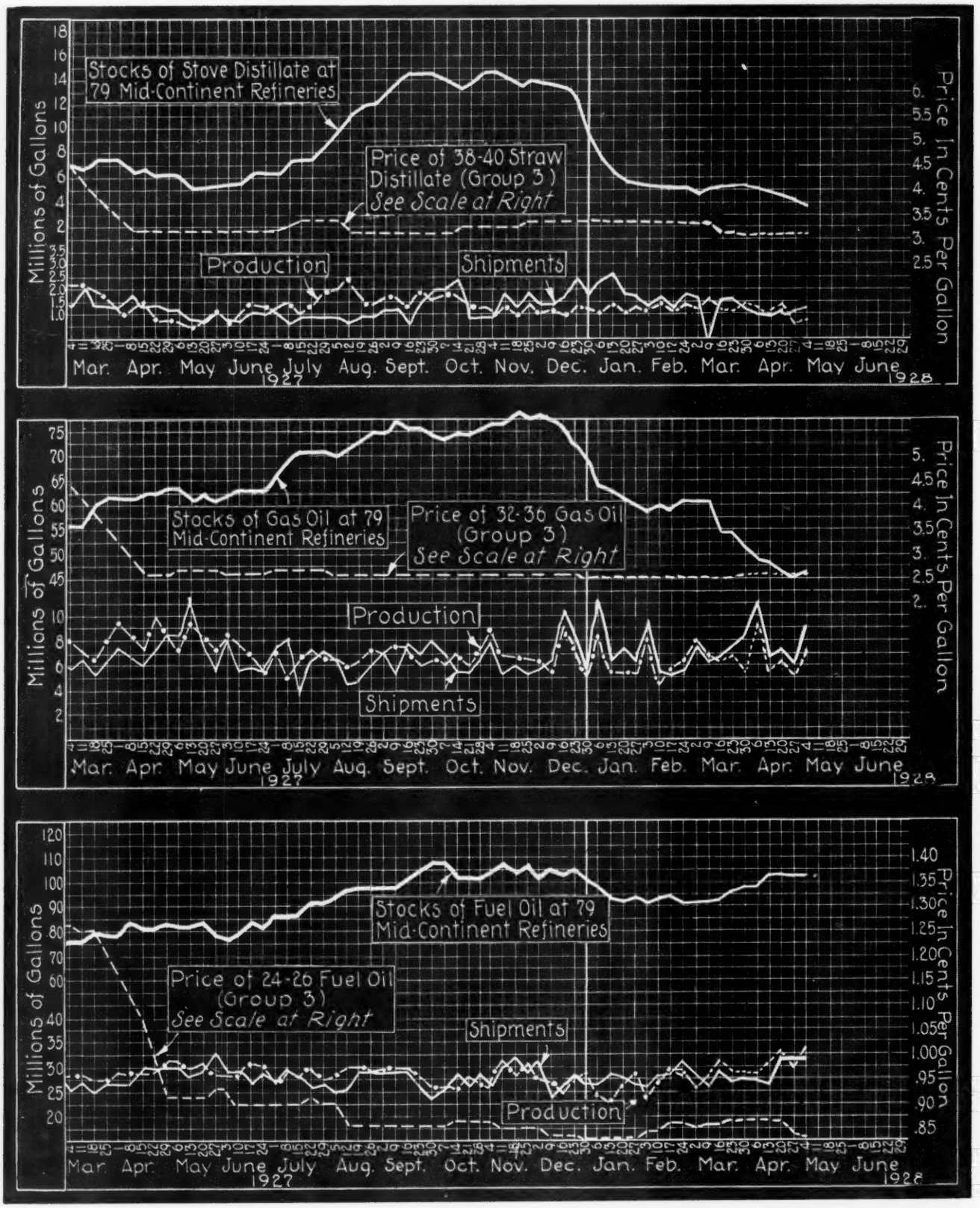

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page

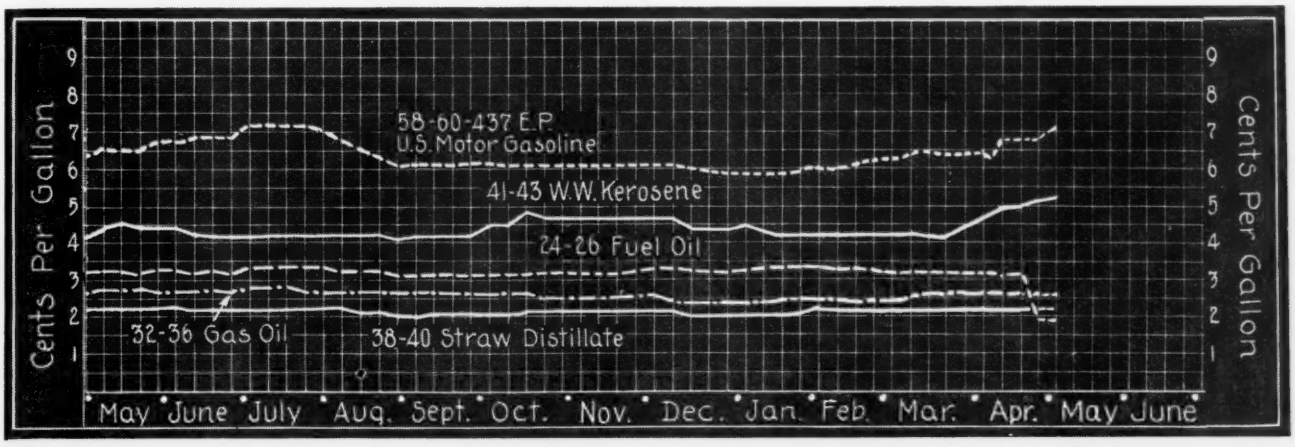

Kerosene Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Price of 41-43 W.W. (Group 3) See Scale at Right
Price In Cent Per Gallon
Shipments
Production
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Barometer of Mid-Continent Refinery Market—Week Ending May 4

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 80 Plants to National Petroleum News


Stocks of Stove Distillate at 79 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Gas Oil at 79 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Fuel Oil at 79 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
24-26 Fuel Oil
32-36 Gas Oil
38-40 Straw Distillate
May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

crease. Texas refiners lowered stocks 571,000 gallons and Kansas refiners 355,000 gallons.

Stocks of kerosene fell below 10,000,000 gallons after showing virtually no change for a month. Shipments totaled 6,700,000 gallons and production 6,166,000 gallons cutting stocks 534,000 gallons to 9,579,000. A year ago kerosene stocks totaled 13,459,000 gallons and two years ago 5,683,000 gallons. All groups except Kansas reduced stocks. In Kansas there was an increase of 356,000 gallons.

Demand for stove distillate has held up so well that refiners have begun to increase their production in order not to run entirely out of a reserve stock. Last week refiners increased their production 18 per cent to 910,000 gallons but demand increased 18 per cent also to 1,490,000 gallons. Stocks May 4 were 3,531,000 gallons compared with 5,013,000 gallons a month ago and 5,959,000 gallons a year ago.

The steady reduction in gas oil stocks which has been proceeding since Jan. 1 has brought reserves down to 45,224,000 gallons. The reduction in the last month has totaled 3,563,000 gallons and since Jan. 1 22,552,000 gallons. Stocks Dec. 30 totaled 67,776,000 gallons.

In the week ended May 4 stocks were cut approximately 1,500,000 gallons. All groups except Kansas drew on reserves.

Shipments of fuel oil were lower last week in every group except Louisiana and Arkansas. In that area shipments increased 2,000,000 gallons to 8,104,000 gallons. In the whole field shipments fell 1,628,000 gallons to 31,924,000 gallons. Production was increased approximately 1,000,000 gallons to 33,218,000 gallons. Stocks May 4 totaled 103,604,000 gallons, compared with 97,657,000 gallons April 6 and 82,675,000 gallons May 6, 1927.

Crude runs were increased 1,377 barrels daily average to 297,092 barrels a day. Runs of partly refined oils increased 8,376 barrels daily average to 19,224 barrels a day.

Attack Made on Freight Rates in Southwest

TULSA, May 7.—The Gulf Refining Co., The Texas Co. and the Magnolia Petroleum Co. have combined forces in a complaint against both interstate and intrastate freight rates on petroleum products in the southwest. Rates in and between the states of Kansas, Oklahoma, Arkansas, Louisiana and Texas are involved. It is planned to hold a joint hearing between the Interstate Commerce Commission and the railroad commissions of the various states.

There are now nine cases before the Interstate Commerce Commission involving some of the rates attacked by the three companies. These include complaints by the Litwood Oil & Supply Co., the Transcontinental Oil Co., Lone Star Gas Co., Skelly Oil Co., Louisiana Oil Refining Corp., and the Continental Oil Co. of Texas. It is requested that all these cases be combined with the new complaint and a uniform schedule of rates be established on an equitable basis.

The high level of intrastate rates in Texas and the inequalities of various rates from other states into Texas are the chief reasons for the present complaint. In Texas common point territory oil rates reach a maximum of 39½ cents per 100 pounds for a haul of 90 miles where more than one carrier is used and 120 miles where only a single line haul is involved. All surrounding states have mileage scales built somewhat on the basis of the Kansas scale which now applies on shipments between Kansas and Oklahoma.

Recently some interstate rates into Texas have been found reasonable which cause Texas refiners to fear that competitors in other states may be able to ship goods into Texas on freight rates which cannot be matched by refiners located in the state itself because of the maximum rate being applicable over short hauls.

Oklahoma and Kansas refiners are planning to intervene in the case.

Weighted Average Prices Oklahoma Market

In line with National Petroleum News' new policy of carrying a weighted average price for the four more important Oklahoma gasolines in its market section, these weighted average prices, together with the number of cars of each grade sold, as of Monday, May 7, are published below. The figures are not available for publication in the refinery market table on page 122 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	183	7.0830
60-62, 437 e. p.	22	7.2386
60-62, 400 e. p.	9	7.3056
64-66, 375 e. p.	4	7.6250

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery, in tank car lots.

Ohio Association Moves

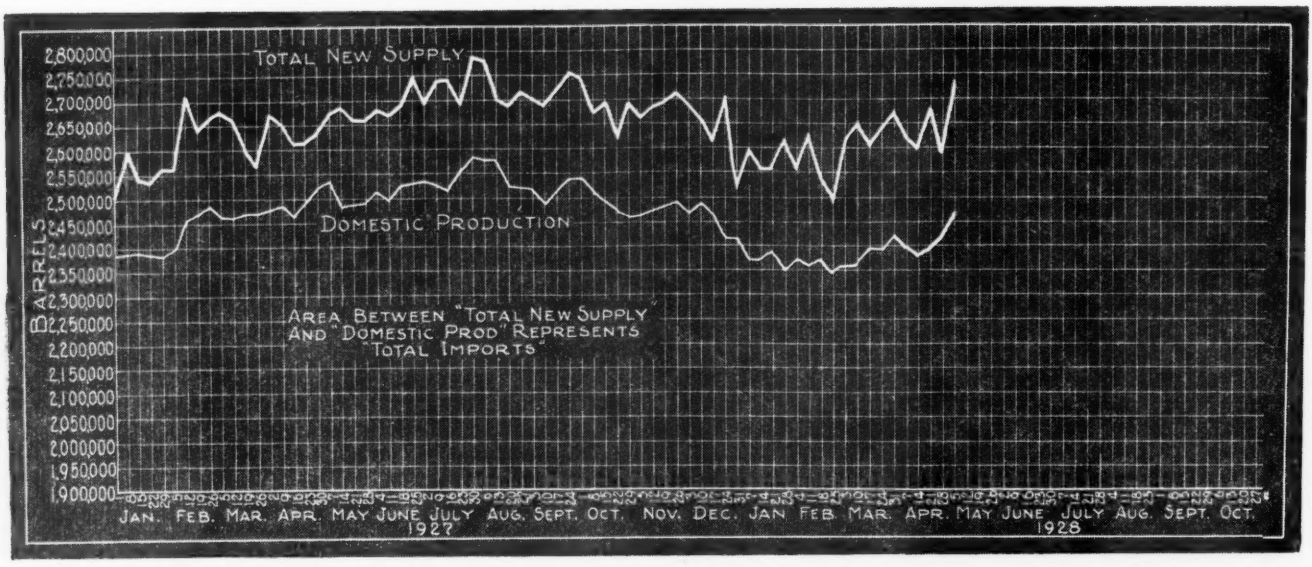
COLUMBUS, O., May 7.—The Ohio Petroleum Marketers' Association has moved its headquarters to 508 Ohio State Savings Bldg., Columbus. It has 750 square feet of space in its new offices.

CORRECTION

Prices of these products in the refinery market table on page 122 of this issue, in the column dated May 7, should be:

Pennsylvania 300 mineral seal..... 7.50 -7.75
Oklahoma 41-43 w.w. kerosene..... 5.25 -5.375
N. Texas 41-43 w.w. kerosene..... 5.125-5.25

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	May 5	April 28
Production east of Rockies	**1,844,350**	**1,782,800**
Increase		**61,550**
Total production in U. S.	**2,466,650**	**2,403,800**
Increase		**62,850**
Crude oil imports	**259,714**	**190,286**
Increase		**69,428**
Total crude supply	**2,726,364**	**2,594,086**
Increase		**132,278**

OKLAHOMA

	May 5	Apr. 28
North Braman	3,200	2,950
South Braman	1,750	1,800
Blackwell	3,650	3,650
Hubbard	2,850	2,900
Thomas	1,400	1,450
Tonkawa	14,100	14,250
Garber	8,750	8,600
Burbank	35,900	36,700
Osage, outside Burbank	28,900	28,900
Watchorn	800	800
Cushing	20,350	20,350
Yale Jennings	9,050	9,050
Davenport	2,100	2,150
Bristow-Slick	23,900	23,950
North Okmulgee	15,500	15,500
Lyons-Deaner	6,550	6,600
Stroud	1,100	1,100
Cromwell	9,850	9,900
Papoose	4,650	4,750
Wewoka	7,300	7,700
Seminole	53,550	54,150
Bowlegs	70,500	72,250
Searight	14,950	15,150
Little River	48,400	38,450
Earlsboro	93,500	93,700
Duncan district	6,550	6,550
Graham	5,800	5,700
Fox	1,700	1,750
Healdton	13,950	14,000
Hewitt	9,000	8,650
Scholem Alechem	13,600	14,100
Others	83,950	82,150
Total Oklahoma	617,100	609,650
Increase		7,450

KANSAS

Greenwood County	29,750	29,400
Florence-Covert	1,400	1,400
Peabody-Elbing	3,650	3,650
Eldorado-Towanda	14,100	14,100
Augusta-Fox-Bush	4,050	4,050
Rainbow Bend	1,650	1,650
Russell	3,100	2,900
Churchill	11,400	11,800
Oxford	16,450	17,100
Others	24,750	24,950
Total, Kansas	110,300	111,000
Decrease		700

NORTH LOUISIANA

Homer	4,400	4,450
Haynesville	6,300	6,300
Caddo, light	9,850	10,150
Caddo, heavy	3,900	3,850
De Soto, Red River	4,200	4,150
Elm Grove	600	550
Bellevue	1,050	1,100
Cotton Valley, light	7,200	3,650
Cotton Valley, heavy	.....	4,400
Urania	6,750	7,300
Pleasant Hill	550	600
Total, North Louisiana	44,800	46,500
Decrease		1,700

ARKANSAS

El Dorado	5,300	5,300
Champagnolle	6,300	3,300
Smackover, light	7,600	7,150
Smackover, heavy	60,100	57,950
Stephens	1,050	1,050
Nevada	1,400	1,400
Lisbon	2,250	2,250
Others	100	100
Total, Arkansas	84,100	78,500
Increase		5,600

TEXAS (Outside Gulf Coast)

Panhandle District

Hutchinson County	41,500	42,100
Carson County	7,400	7,600
Gray County	18,750	19,550
Wheeler County	1,000	1,000
Others	150	250
Total, Panhandle District	68,800	70,500
Decrease		1,700

North Texas

Burkburnett	11,000	11,150
Electra	12,850	12,750
Iowa Park and K-M-A	3,500	3,200
Wilbarger	12,000	11,750
Archer County	22,500	21,000
Montague-Cooke	12,300	12,150
Others	600	650
Total, North Tex.	74,750	72,650
Increase		2,100

West Central Texas

Stephens County	8,250	8,000
Eastland-Desdemona	7,750	7,650
Brown County	12,900	12,750
Coleman County	1,650	1,700
Callahan County	3,700	3,750
Shackleford County	9,600	9,500
Young County	8,000	8,250
Throckmorton County	1,000	1,000
Palo Pinto County	450	450
Jack County	1,300	1,450
Others	900	750
Total, West Central Texas	55,500	55,250
Increase		250

West Texas

Jones County	1,350	1,300
Mitchell & Scurry Counties	3,100	3,100
Howard County	4,000	3,850
Reagan County	18,500	18,800
Crane & Upton Counties	72,800	74,800
Crockett County	2,700	2,900
Pecos County	49,700	50,000
Winkler County	272,800	230,500
Others	2,000	1,900
Total, West Texas	426,950	387,150
Increase		39,800

East Central Texas

Mexia	7,400	7,400
Currie	500	500
Richland	500	500
Wortham	2,000	2,050
Corsicana-Powell	11,750	11,800
Nigger Creek	1,350	1,350
Total, East Central Texas	23,500	23,600
Decrease		100

Southwest Texas

Luling	13,500	13,600
Lytton Springs	1,450	1,500
Somerset	700	700
Laredo District	6,100	6,200
Piedras Pintas	.....	.....
Dale	1,100	1,100
Others	400	400
Total, Southwest Texas	23,250	23,500
Decrease		250
Total, Texas—(Outside Gulf Coast)	672,750	632,650
Increase		40,100

GULF COAST

Coastal Texas

	May 5	Apr. 28
West Columbia	8,300	8,300
Damon Mound	800	1,000
Big Creek	1,500	1,400
Boling	2,400	2,200
Blue Ridge	6,900	6,950
Pierce Junction	12,000	10,000
Humble	1,100	1,150
Goose Creek	7,300	7,300
South Liberty	3,700	3,600
Hull	10,750	10,500
Saratoga	1,000	1,100
Batson	1,500	1,450
Barber's Hill	550	550
Sour Lake	3,500	3,450
Spindletop	37,200	32,000
Orange County	4,600	4,700
Others	3,000	2,300
Total, Coastal Texas	106,100	97,950
Increase		8,150

Coastal Louisiana

Vinton	4,600	4,650
Lockport	3,950	4,500
Evangeline	1,050	1,150
East Hackberry	3,650	1,900
Edgerly	1,100	1,100
Others	3,300	3,100
Total, Coastal Louisiana	17,650	16,400
Increase		1,250
Total Gulf Coast	123,750	114,350
Increase		9,400

ROCKY MOUNTAIN

Wyoming

Salt Creek	40,050	41,450
Grass Creek	2,600	2,500
Elk Basin	1,100	1,200
Big Muddy	2,750	2,750
Lost Soldier	5,150	5,200
Rock Creek	2,700	2,650
Lance Creek	750	750
Teapot Dome	.....	.....
Others	4,950	3,950
Total, Wyoming	60,050	60,450
Decrease		400

Montana

Cat Creek	1,800	1,800
Sunburst	9,800	9,500
Others	150	150
Total, Montana	11,750	11,450
Increase		300

Colorado

Moffat (Craig)	1,600	1,500
Fort Collins	2,900	2,950
Florence	1,450	1,250
Others	900	950
Total, Colorado	6,850	6,650
Increase		200

New Mexico

Table Mesa	50	350
Hogback	500	500
Artesia	1,200	1,150
Rattlesnake	450	400
Others	200	200
Total New Mexico	2,400	2,600
Decrease		200
Total, Rocky Mountain	81,050	81,150
Decrease		100

CALIFORNIA

	May 5	Apr. 28
Santa Fe Springs	37,000	37,000
Long Beach	171,500	170,000
Huntington Beach	55,500	55,500
Torrance	18,500	18,500
Dominguez	12,500	12,500
Rosecrans	6,500	6,500
Inglewood	29,000	29,000
Midway-Sunset	73,500	73,500
Ventura Avenue	49,000	49,000
Seal Beach	38,500	38,500
Others	130,800	131,000
Total California	622,300	621,000
Increase		1,300

EASTERN

(Including Ill., Ind. Ky., O., W. Va., Pa., and N. Y.)	110,500	109,000
Increase		1,500

Little River, Earlsboro and Allen Pools Show There is Plenty of Oil Yet

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, May 5

AT THE time when major effort is concentrated on retarding the machinery of oil production, nature laughs sarcastically and devises new problems for the producers to grapple with.

While the Little River area of Twp. 7-6, Seminole county, turned out within the past two weeks to be another large pool in the process of being born, several other spots had their innings.

The wildcatting machinery is running down, but in its final revolutions it is turning out some interesting goods. The life of the lease broker is filled with woe in the Mid-Continent these days; for the oil companies are not buying much and the boys who are trying to promote new tests by selling portions of blocks of acreage are not raising enough money to dig the cellar.

Nevertheless, the "cats" that were financed or started by people who supply their own finances, and hence will be completed, make a sizable total and as quite a few are in the region adjacent to the Seminole territory, there is plenty of chance that new pools will be opened from time to time all summer long.

Right now there are developments in the northwest extension of the Allen pool, in Pontotoc, Hughes and Seminole counties, that put this more in the running. Production is found in a series of shales, sandstones and sandy limes, and deeper drilling in some of the wells is getting results. Furthermore, subsurface information indicates that the field is not yet limited in areal extent.

During the week the production of the field increased about 5000 barrels, reaching a high of 19,000 barrels on May 4. The number of wells on that day was 85. Of this amount the Mid-Continent Petroleum Corp. had 9000 barrels from nine wells. Its No. 4 Fleet, in the NW SE of 7-5-8, was the banner performer. It made 2728 barrels from total depth of 2746 feet. The same company's No. 7 Fleet on the same lease, was deepened and responded with a flow of 80 barrels per hour, from total depth of 2766 feet.

Earlsboro field, long dormant, contributed as its part in averting a shortage of light crude, a 7500-barrel well. The Superior Oil Co. drilled its No. 1 Walker, SE NE NE of 2-9-5, into small production in the Wilcox more than a week ago. It completed the well this week by giving it a 15-quart shot. It responded with a flow of 4620 barrels in 15 hours and in the 24 hours ended at 7 o'clock the morning of May 5 it yielded 7448 barrels. Top of the sand in this well was found at 4377 feet and the total depth is 4390 feet.

This well is in the northeast part of the Earlsboro field—in fact it is the farthest north producing well of the field. A half mile east of the Superior well are two Wilcox failures. The south offset to the big well was drilled by the Sinclair Oil & Gas Co. Its sand record was 4429-46 feet and it had initial production of 1210 barrels. The Sinclair property, being 40 acres out of the quarter section, with Superior holding the other 120, has been a good lease and three wells on it are making 4500 barrels.

The southeast offset to the Superior well was drilled by the Barnsdall Oil Co. and Atlantic Oil Producing Co. It is in the NW SW NW of 1-9-5. Its sand record was 4562-71 feet and it had initial production of 2061 barrels. This lease is producing at this time around 7700 barrels from five wells.

The east offset to the Superior's well is on a 40-acre lease also held by the Superior and the well is being drilled.

Little River's contribution to the production record of the week is discussed in another article in this issue, with map of the area. The wells which were started early in March to test the territory south of the original Little River pool have been coming in for such large production as to indicate that another major pool is in the making.

Estimates on its probable size range from 100,000 to 150,000 barrels, but we recall vividly the time when the original Seminole pool was given a high rating of 150,000 barrels by persons who now hang their heads in shame when their predictions are raked up by some fiend in human form.

Little River and its southward extensions and exposures may do half the estimated amount or twice that much for all anybody knows. With wells coming in for initial productions ranging from 2500 to 5000 barrels and a proven area of more than two miles northeast and southwest—in the extension part of the field—it appears that the high estimators are as much entitled to their say as anyone else. Of course, if the operators can hold the drilling down to small scope, the peak of the field will not be so imposing.

There is some speculating as to the importance of the newly opened Wilcox sand area in Twp. 7-5. This township and the two next west of it have had production from the Hunton lime for several months. It was not regarded as favorable Wilcox territory because of some failures that were drilled. Magnolia Petroleum Co.'s No. 1 Hembree, NW NW SE of 19-7-5, completed two weeks ago, has been put on air lift and is making about 600 barrels. Two offsets are being drilled by the same company. The production of the well is not imposing, but the fact that the Wilcox horizon is productive in the area is important.

In Twp. 5N-5E, Pontotoc county, northwest of Ada, Ramsey Brothers completed a well in the NW NE of 32-5-5, which is making 600 barrels from the Simpson formation, above the Wilcox. It offsets a well completed several weeks ago by Jolly & Ogg, which had sand at 2587-2606 feet and initial production of 300 barrels. The latter well is now making about 40 barrels daily.

In Kansas, the attempt of Lassen et al. to extend the Lost Springs pool of Marion county was a failure. Their test in the NW SE of 28-17S-4E, a half mile south of production, drilled the chat producing horizon at 2423-77 feet and is dry and abandoned.

More Oil Pinched In At Ventura Field

LOS ANGELES, May 5.—Shell Co. this week pinched in an additional 500 barrels of production at Ventura Avenue and it is expected that Associated Oil Co. will pinch in another 1000 barrels in a few days. This will further reduce the excess production of gas in this field. This action is being taken by the two companies without pressure from state authorities, and on their own motion.

Total shut in production in California in March was 133,000 barrels, but this included nearly 10,000 barrels of pinched-in production at Ventura Avenue, with the balance completely shut in. Total shut in now at Kern River is 22,500 barrels, while Midway-Sunset area reports 20,500 barrels. At Coalinga, the total shut in is 24,000 barrels, at Elk Hills, 14,500 barrels.

Seminole District Production by Companies and Leases, May 2 and April 25, 1928

BOWLEGS

Company	Farm	S. T. R.	May 2 Wells	May 2 Prod.	April 25 Wells	April 25 Prod.
Amerada	Rascoe	15- 8-6	8	1,655	8	1,775
Atlantic	Baker	1- 8-6	4	350	4	390
Atlantic	Fleet	23- 8-6	3	450	3	420
Atlantic	Grayson	21- 8-6	4	600	4	575
Atlantic	A. Jones	10- 8-6	3	90	3	90
Atlantic	C. Jones	9- 8-6	2	184	2	175
Total Atlantic			16	1,674	16	1,650
Barnsdall	McNac	28- 8-6	1	26	1	27
Barnsdall	Murrow	11- 8-6	4	639	4	766
Total Barnsdall			5	665	5	793
Carter	Bowlegs	15- 8-6	4	1,375	4	1,335
Carter	Burden	23- 8-6	2	285	2	260
Carter	Harjoche	15- 8-6	6	650	6	560
Carter	Hilly	23- 8-6	3	750	3	845
Carter	Jones	11- 8-6	4	1,115	4	1,240
Carter	McGeisey	21- 8-6	1	30	1	25
Carter	Mecco	9 -8-6	1	35	1	20
Carter	Melisse	8- 9-6	1	105	1	105
Carter	Walker	15- 8-6	4	550	4	565
Carter	Wise	23- 8-6	11	2,655	12	2,900
Total Carter			37	7,550	38	7,865
Dixie	Culley	11- 8-6	1	245	0	0
Empire	Lacey	15- 8-6	6	504	6	409
Empire	Wise	23- 8-6	2	357	2	330
Total Empire			8	861	8	739
Gypsy	Bowlegs	22- 8-6	1	190	1	180
Gypsy	Bradley	8- 8-6	1	0	1	0
Gypsy	Cumsey	8- 8-6	4	1,250	4	1,290
Gypsy	Dosar	7- 8-6	1	100	1	100
Gypsy	Grayson	13- 8-6	4	847	4	880
Gypsy	Harjoche	10- 8-6	2	1,892	2	2,697
Gypsy	Jones	11- 8-6	1	267	1	260
Gypsy	Walker	15- 8-6	8	1,745	8	1,680
Gypsy	Wise	23- 8-6	2	220	3	197
Total Gypsy			24	6,511	25	7,284
I. T. I. O.	Barnett	23- 8-6	2	387	2	377
I. T. I. O.	Barnett-B	24- 8-6	1	204	1	232
I. T. I. O.	Billington	22- 8-6	5	802	5	812
I. T. I. O.	Bowlegs	22- 8-6	10	1,700	10	1,587
I. T. I. O.	Davis	22- 8-6	4	1,167	4	1,587
I. T. I. O.	Fay	13- 8-6	9	2,087	9	1,991
I. T. I. O.	Goforth	15- 8-6	12	1,452	12	1,565
I. T. I. O.	Livingston	15- 8-6	10	3,648	10	3,565
I. T. I. O.	Lizzie	13- 8-6	2	377	2	377
I. T. I. O.	Walker	15- 8-6	8	888	8	898
I. T. I. O.	Wilmott	15- 8-6	4	361	4	350
I. T. I. O.	Work	24- 8-6	1	128	1	140
I. T. I. O.	Youngblood	24- 8-6	2	172	2	21
Total I. T. I. O.			70	13,373	70	13,002
Magnolia	Davis	13- 8-6	3	454	3	510
Magnolia	Davis-M	13- 8-6	1	231	1	257
Magnolia	Hammond	10- 8-6	4	960	4	1,008
Magnolia	Rhodes	12- 8-6	5	4,082	5	4,098
Magnolia	Van Buskirk	9- 8-6	1	329	1	347
Total Magnolia			14	6,056	14	6,220
McCulloch	Bowlegs	22- 8-6	2	420	2	420
Mid-Continent	Baker	10- 8-6	4	1,254	4	1,292
Mid-Continent	Bowlegs	22- 8-6	1	30	1	50
Mid-Continent	Smith	12- 8-6	6	435	6	500
Total Mid-Continent			11	1,719	11	1,842
Minnehoma	Bowlegs	15- 8-6	4	312	4	274
Prairie	Gahagan	23- 8-6	4	372	4	305
Prairie	Harber	10- 8-6	8	2,630	8	2,785
Prairie	Jones	11- 8-6	4	445	4	295
Prairie	Templeton	12- 8-6	6	2,775	6	2,830
Prairie	Whitney	23- 8-6	4	435	4	425
Total Prairie			26	6,657	26	6,640
Pure	Reed	14- 8-6	15	2,413	15	2,643
Pure	Strother-D	11-14-8-6	4	579	4	388
Pure	Strother-F	10- 8-6	4	1,861	4	1,990
Total Pure			23	4,853	23	5,021
Roxana	Taylor	16- 8-6	5	445	5	470
Shaffer	Lacy	14- 8-6	3	330	3	302
Sinclair	Bowlegs	22- 8-6	1	65	1	70
Sinclair	Cumsey	10- 8-6	4	3,522	4	3,680
Sinclair	Ellen	11- 8-6	7	1,050	7	1,182
Sinclair	Harjo	14- 8-6	3	605	3	565
Sinclair	Jones	9- 8-6	7	2,625	7	2,915
Sinclair	Taylor	10- 8-6	4	2,249	4	2,242
Sinclair	Taylor-W	10- 8-6	2	1,223	1	804
Sinclair	Walker	22- 8-6	4	1,000	4	1,020
Total Sinclair			32	12,339	31	12,478
Texas	Reed	14- 8-6	11	2,120	11	2,325
Tidal	Grayson	13- 8-6	4	580	4	680
Tidal	Harjoche	10- 8-6	6	1,175	6	1,255
Total Tidal			10	1,755	10	1,935
Twin State	Jones	11- 8-6	3	88	3	80
Total Bowlegs			313	69,628	313	71,107

LITTLE RIVER

Amerada	Nitey	2- 7-6	3	2,445	3	2,660
Amerada et al.	Fore	35- 8-6	2	690	2	710
Total Amerada			5	3,135	5	3,370
Barnsdall	Hotulke	22- 8-6	1	38	1	40
Blackwell	Nitey	35- 8-6	6	2,483	6	1,957
Carter	Fish	36- 8-6	6	1,410	6	1,490
Carter	Jackson	11- 7-6	1	685	1	705
Total Carter			7	2,095	7	2,195
Continental	Cosar	36- 8-6	4	2,010	4	1,990
Gypsy	Brown	33- 8-6	1	50	1	50
Gypsy	Conard	22- 7-6	1	50	1	52
Gypsy	Campbell	36- 8-6	2	265	2	235
Gypsy	Denmark	11- 8-6	1	50	1	3,881
Gypsy	Nungee	36- 8-6	1	25	1	25
Gypsy	Hulhoke	14- 7-6	1	1,495	0	0
Gypsy	Pottie	35- 8-6	3	365	3	347
Gypsy	Renton	11- 7-6	2	2,900	1	1,060
Total Gypsy			12	5,215	10	5,650
Independent	Harris	23- 7-6	1	140	1	50
Indep. et al.	Davis	2- 7-6	3	2,965	3	2,965
Total Independent			4	3,104	4	3,015
I. T. I. O.	Campbell	1- 7-6	1	82	1	93
I. T. I. O.	Dungan	35- 8-6	3	2,115	3	2,276
I. T. I. O.	MA House	1- 7-6	1	159	1	247
I. T. I. O.	WE House	1- 7-6	1	54	1	80
I. T. I. O.	WE House-B	2- 7-6	4	2,394	4	2,539
I. T. I. O.	Hull	26- 8-6	1	76	1	75
I. T. I. O.	Jackson	1- 7-6	3	1,910	3	1,934
I. T. I. O.	McCulla	1- 7-6	3	837	3	827
I. T. I. O.	Nitey	2- 7-6	7	1,042	7	1,145
I. T. I. O.	Phoebe-A	36- 8-6	3	716	3	763
I. T. I. O.	Phoebe-B	36- 8-6	4	345	4	409
I. T. I. O.	Reed	1- 7-6	1	61	1	72
I. T. I. O.	Soketneche	1- 7-6	4	923	4	877
Total I. T. I. O.			36	10,714	36	11,337
Magnolia	Cruse	2- 7-6	3	1,585	3	1,585
Magnolia	Dixon	31- 8-7	1	0	1	0
Magnolia	Pottie	34- 8-6	3	685	3	711
Total Magnolia			7	2,145	7	2,296
Mid-Cont.	Bruner	11- 7-6	1	4,240	1	110
Mid-Cont.	Smith	5- 7-7	1	26	1	25
Mid-Cont.	Wadsworth	36- 8-6	7	890	7	750
Total Mid-Continent			9	5,156	9	885
W. B. Pine	Hovecha	26- 8-6	1	855	1	770
Pine-Phillips	Pottie	35- 8-6	2	245	2	105
Total Pine			3	1,100	3	875
Pure	Harjo	11- 7-6	1	2,755	0	0
P & R	Chilcoat	25- 8-6	1	865	1	835
P & R	Dungan	35- 8-6	1	85	1	70
P & R	House	2- 7-6	4	1,625	4	1,615
Total P & R			6	2,575	6	2,520
Reiter-Foster	Bunyard	14- 7-5	1	200	0	0
Shaffer	Narcome	35- 8-6	1	95	1	85
Sinclair	Cosar	36- 8-6	3	1,260	2	1,315
Sinclair	Teewee	14- 8-5	1	298	0	0
Total Sinclair			4	1,558	2	1,315
Snowden et al.	Tiger	13- 7-6	1	1,810	1	2,087
Superior	Soketneche	1- 7-6	1	13	1	13
Texas-Indep.	Holulke	23- 7-6	1	100	0	0
Texas	Coker	1- 7-6	3	580	3	605
Total Texas			4	680	3	605
Tidal	House	1- 7-6	3	800	3	790
Tidal	Johnson	1- 7-6	1	70	1	75
Total Tidal			4	870	4	865
TOTAL LITTLE RIVER			116	47,751	110	41,100

EARLSBORO

Amerada	Anderson	15- 8-5	2	1,080	2	1,095
Amerada	Cowden	4- 9-5	7	1,735	8	1,955
Amerada	Rogers	3- 9-5	2	1,070	2	1,140
Total Amerada			11	3,885	12	4,190
Atlan. et al.	Foremen	18- 9-5	1	162	1	175
Barnsdall	Brown	10- 9-5	4	2,099	4	2,106
Barnsdall	F. Bruner	2- 9-5	2	860	2	950
Barnsdall	N. Bruner	10- 9-5	4	1,410	4	1,599
Barnsdall	Cudjo	14- 9-5	1	26	1	26
Barnsdall	D. Davis	11- 9-5	3	390	3	188
Barnsdall	J. Davis	11- 9-5	4	1,251	4	385
Barnsdall	M. Davis	11- 9-5	3	113	3	100
Barnsdall	Gibson	9- 9-5	8	2,842	8	3,697
Barnsdall	Hern	15- 9-5	1	4	1	4
Barnsdall	Ingram	1- 9-5	8	3,445	8	2,879
Barnsdall	Pack	10- 9-5	4	200	4	263
Barnsdall	Peter	10- 9-5	4	174	4	136
Barnsdall	Sango	1- 9-5	5	7,746	5	7,920
Barnsdall	Sebolka	15- 9-5	1	482	1	504
Barnsdall	H. Sullivan	11- 9-5	1	0	1	0
Barnsdall	Sull-Harjo	10- 9-5	2	26	2	77
Barnsdall	Watsutke	12- 9-5	4	2,251	4	2,114
Total Barnsdall			59	23,218	59	22,948
Carter	Davis	13- 9-5	2	570	2	530
Carter	Payne	12- 9-5	3	15	3	20
Carter	Sango	1- 9-5	4	1,465	4	1,620
Total Carter			9	2,050	9	2,170
Continental	Kays	2- 9-5	2	0	2	15
Continental	Spencer	12- 9-5	4	1,150	4	1,255
Total Continental			6	1,150	6	1,270

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, May 2 and April 25, 1928

(*Continued from Page 42*)

Company	Farm	S. T. R.	May 2 Wells	May 2 Prod.	April 25 Wells	April 25 Prod.
Crosbie	Bryant	9- 9-5	2	0	2	0
Empire	Barker	12- 9-5	1	800	1	840
Empire	Edmondson	3- 9-5	3	660	3	860
Total Empire			4	1,460	4	1,700
Gypsy	Bruner	10- 9-5	4	2,722	4	2,880
Gypsy	B. Carter	11- 9-5	9	3,242	9	3,.. 0
Gypsy	Earl	16- 9-5	1	17	1	20
Gypsy	Hunick	5- 9-5	1	2,325	1	2,455
Gypsy	Noble	12- 9-5	4	2,937	4	2,927
Gypsy	Peter	10- 9-5	3	205	3	217
Gypsy	Sango	1- 9-5	5	4,337	5	4,3 0
Gypsy	State	16- 9-5	4	1,092	4	1,075
Total Gypsy			32	16,877	32	16,884
Independent	Bruner	10- 9-5	4	430	4	3 5
Indep.	Sullivan	10- 9-5	3	117	3	142
Indep.	Knapp	8- 9-5	4	2,175	4	2,195
Indep.-Margay	Gaines	11- 9-5	4	900	4	1,015
Total Indep.			15	3,622	15	3,747
Magnolia	Bryant	9- 9-5	6	1,333	6	1,233
Magnolia	Cowden	4- 9-5	4	70	4	70
Magnolia	Dixon	12- 9-5	1	0	1	0
Magnolia	Edmundson	3- 9-5	3	25	3	30
Magnolia	Holmsley	11- 9-5	8	1,624	8	2,077
Magnolia	Hyde	13- 9-5	1	1,802	1	1,745
Magnolia	Ingram	10- 9-5	1	50	1	70
Magnolia	Lena	10- 9-5	3	75	3	70
Magnolia	Seay	12- 9-5	9	4,027	9	4,072
Magnolia	Simpson	10- 9-5	3	251	3	47
Magnolia	Sparks	11- 9-5	7	617	7	726
Magnolia	Sullivan	12- 9-5	3	140	3	47
Total Magnolia			49	9,994	48	10,346
Mid-Continent	McCumber	9- 9-5	7	405	7	405
Mid-Kans	Anderson	14- 9-5	3	150	3	135
Phillips	Dunnaway	14- 9-5	1	30	1	30
Phillips	Gram	9- 9-5	3	145	3	105
Total Phillips			4	174	4	135
Prairie	Baker	24- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,585	5	3,750
Prairie	C. Graham	3- 9-5	2	45	2	35
Prairie	O. Graham	10- 9-5	4	1,420	4	1,445
Prairie	Stidham	11- 9-5	13	4,440	13	4,275
Total Prairie			25	9,540	25	9,555
Roxana	Bayliss	17- 9-5	1	15	1	15
Roxana	Spencer	12- 9-5	2	1,167	2	1,617
Total Roxana			3	1,182	3	1,632
Shaffer	Clark	1- 9-5	5	774	5	786
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	2	20	2	25
Sinclair	Sango	2- 9-5	3	4,705	3	4,455
Total Sinclair			6	4,725	6	4,495
Skelly	Sherry	6- 9-6	1	76	1	150
Skelly	Spencer	12- 9-5	1	542	1	615
Total Skelly			2	618	2	765
Superior	Walker	2- 9-5	1	0	1	232
Texas	Anderson	2- 9-5	7	725	7	795
Texas	Brown	10- 9-5	8	1,925	8	1,945
Texas	Rogers	5- 9-5	4	3,595	4	3,665
Texas	Wilmott	10- 9-5	7	957	7	795
Total Texas			26	7,202	26	7,525
Tidal	Watkins	9- 9-5	8	3,010	8	3,135
Twin State	Barker	12- 9-5	3	100	3	100
Twin State	Hern	2- 9-5	4	1,815	4	2,005
Total Twin State			7	1,915	7	2,105
TOTAL EARLSBORO			286	92,219	287	94,324

SUMMARY

TOTAL BOWLEGS	**313**	**69,628**	**313**	**71,107**
TOTAL LITTLE RIVER	**116**	**47,751**	**110**	**41,100**
TOTAL SEARIGHT	**68**	**14,396**	**69**	**14,594**
TOTAL SEMINOLE	**304**	**52,835**	**307**	**54,674**
GRAND TOTAL SEMINOLE AREA	**1,087**	**276,829**	**1,086**	**275,799**
Average per well			**255**	**254**

Completions in Oklahoma and Kansas, Week Ended May 5, 1928

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Hamon	1	SWc SE NW 23-1-3 W	2306-2436	210
Magnolia	2	SWc NE SW 33-1-3 W	3457-3768	58

Cimarron County

Phillips	1	SEc NE NE 24-6-2 E	T.D. 4370	Dry
Ramsey	1	C SE 34-4-1 E	T.D. 4306	Dry

Creek County

Magnolia	1	SWc NE NE 3-16-7 E	T.D. 3677	Dry
Madden et al	1	SWc NW SW 20-16-8 E	T.D. 3950	Dry
Sunray	1	SEc SW SW 7-18-12 E	T.D. 2305	Dry
Roxana	1	SWc NW NW 11-17-9 E	T.D. 1957	Dry
Wood et al	3	NWc NW SE 21-17-9 E	T.D. 2975	Dry
Shaffer	4	SWc NW 17-17-7 E	2823-2849 OWD	317
Tidal	1	NWc SE 20-17-7 E	2749-2780	130
Roxana et al	3	SEc NE NW 18-19-9 E	2460-2470	1M
Haddock et al	1	SEc NE 14-18-9 E	2812-2815	9½M
Winemiller	3	NWc SE SE NW 4-17-11 E	1890-1910	20

Garvin County

Magnolia	28	SEc SW NE 15-1-3 W	T.D. 1770	Dry

Grady County

Okla. Gas Utilities	4	SWc SE SW 23-5-8 W	1966-2355	20M
Magnolia	3	SWc NW NE 2-4-8 W	T.D. 2400	32M

Grant County

Okla. N. Utilities	1	C NW SE 2-27-3 W	4727-4738	10.5M

Jefferson County

Carter	5	SEc NW NE 33-6-5 W	1171-1297	15

Kay County

Blackwell	5	C SW SE 9-27-1 W	3598-3600 OWD	30
Nehr	1	C NW SE 36-28-1 W	763-773	1.4M

Muskogee County

Mitchel	2	SEc SW SW 35-16-15 E	1129-1132	2¼M
Boyle et al	5	CN½ SE 8-15-15 E	1629-1630	50
Dixon	5	NEc NW NE NW 12-14-18 E	930-949	2M
Mills et al	1	CSL SE NE SW 6-14-19 E	514-536	40
Towner-Witt	1	SE NE SW 6-14-19 E	505-522	17
Tilly et al	1	SEc NE SE SE 33-15-19 E	T.D. 548	Dry
Paul et al	3	SWc NW SW 17-14-17 E	T.D. 1455	Dry
Tillman	2	NWc NE SW 8-14-19 E	T.D. 758	Dry

Okfuskee County

Umbrum	2	NEc SE SE 35-11-11 E	2510-2540	6M
Atlantic	2	NWc SW NE SE 11-10-11 E	2056-2072	125

Okmulgee County

Stout et al	2	CNL NW NW 29-16-14 E	1750-1757	6
Lavery et al	1	NWc SE SE 10-15-14 E	T.D. 1700	Dry

Osage County

Kewanee	11	SWc SE NW 34-27-6 E	2815-2904	20
Carter	9	SWc NE SE 3-26-6 E	2751-2814	120
Kay County	2	C NW SE 22-24-7 E	1181-1208	12M
Peters et al	1	NWc SE 32-24-9 E	1524-1560	10
I. T. I. O.	6	NWc NE NW 1-21-8 E	2333-2358	15

Pontotoc County

I. T. I. O.	1	NWc SW SE 29-5-5 E	2495-2615	105
Shaffer	1	NW NE 36-5-7 E	2297-2304	180

Pawnee County

Privett Drlg.	1	SWc SE NE 10-20-6 E	3095-3148	10

Pottawatomie County

Gypsy	1	NEc SE NE 23-7-4 E	4124-4284	1673
Central Nat'l	1	SWc 28-10-4 E	T.D. 4323	Dry

Seminole County

Atkins	1	SEc SW 9-9-8 E	T.D. 3871	Dry
Magnolia	1	SEc NW 5-6-7 E	T.D. 4535	Dry
Slick	1	NEc SE NW 13-5-6 E	T.D. 3998	Dry
Barnsdall	4	SWc SE NW 1-9-5 E	3527-3572	30
Barnsdall	6	NWc SW NW 1-9-5 E	4562-4571	2061
Carter	5	NWc SE NE 4-9-6 E	4425-4431	500
Magnolia	5	SWc NE SW 12-8-6 E	4316-4323	360
Magnolia	2	SWc SE SE 2-7-6 E	4141-4151	950
Gypsy	1	NWc SW SE 11-7-6 E	4297-4300	4016
Gypsy	1	NWc NE NE 11-7-6 E	4232-4243	1207
Gypsy	1	SEc NE NE 22-7-6 E	4200-4205	3562
Mid-Continent	4	NEc SE SE 7-5-8 E	2720-2734	255
Texas	3	SEc NE SW 7-5-8 E	2602-2617	25M
Louisiana	4	NWc NE NE 18-5-8 E	2555-2613	450

Stephens County

Magnolia	1	SWc NE 30-1-9 W	2160-2175	8½M
Amerada	1	NEc SE SW 12-1-4 W	2508-3028 OWD	36M
Humble	2	SWc SE 12-1-4 W	2405-2740	60M
Magnolia	2	SEc SW 13-1-4 W	2775-3015	120
Magnolia	4	SWc SE NW 13-1-4 W	2707-2859	2148
Skelly	5	SWc NW SE 13-1-4 W	2325-3209	22M
Hurley et al	1	CWL SE SW 19-1-9 W	T.D. 2175	Dry

Texas County

Hydraulic	1	NEc 26-1-15 E	T.D. 600	Dry

Tulsa County

The Texas	1	SWc NW NE 28-19-10 E	T.D. 2330	Dry

Wagoner County

Cane et al	3	NWc NE SE 35-17-17 E	879-884	7½M

KANSAS

Butler County

Sage-Fowler et al	1	SWc SE SE 21-25-4 E	2553-2630	60
Davis-Hazlett et al	4	SEc SW SW 3-27-6 E	3130-3147	100
Shawyer et al	1	NEc SE 8-29-8 E	T.D. 3118	Dry

Cowley County

Roth-Faurot	1	SEc SW SE 18-31-5 E	T.D. 600	Dry
Pryor et al	2	NWc NE NE 31-31-6 E	2915-2951	25

Elk County

McGinnis et al	1	NWc NE NE 10-30-12 E	T.D. 1656	Dry

Greenwood County

Empire	8	SEc NW NW 25-22-12 E	1656-1720	145
Empire	11	CNL NW SE NE 25-22-12 E	1672-1725	155
Skelly	1	SWc NE 30-22-13 E	1682-1732	450
Skelly	2	NWc SW NE 30-22-13 E	1689-1733	100
Mendenhall et al	1	NEc NW SW 5-25-13 E	1484-1493	6M

Russell County

Wilcox	4	SWc 17-12-15 W	2422-2432	7M

Stafford County

Harper et al	1	NEc SW NE 23-21-11 W	T.D. 4176 OWD	Dry

Sumner County

Roxana	4	SEc SW SW SW 14-32-2 E	2046-2127	500
Ramsey et al	2	NEc 22-32-2 E	2138-2195	200

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended May 5, 1928

TEXAS
NORTH AND EAST CENTRAL

Brown County

Company	Well / Farm	Location / Survey	Depth	Init. Prod.
Gilman et al	1-Hickman	Benson	1240-1272	350
Midland	2-Butler	Benson	1243-1275	165
Phillips	11-Hickman	Benson	1250-1287	400
Cranfill-Reynolds	2-Eubanks	Mitchell	1205-1225	400
Jay Hawk	5-Boyson	Williams	1205-1215	75
Humble	1-Munselle	Arenbeck	1119-1132	16
Henshaw	1-Cross	Kenney	1082-1090	133
Mexana	1-Bradley	Smith	T.D. 1320	Dry
Mitcham et al	1-Thomasson	Clelland	T.D. 1060	Dry
Baker et al	2-Cross	Kenney	T.D. 1083	Dry
Cen Tex	1-Alcorn	Honeycutt	T.D. 1166	Dry
Henshaw	9-Bush	Kenney	T.D. 1150	Dry
Ditto	1-Min	Rosin	T.D. 1627	Dry
Calcasieu	1-Newman	West	T.D. 1568	Dry

Callahan County

Armstrong et al	1-Albes	D&DA	T.D. 501	Dry

Coleman County

Mid-Sun	1-Harris	Peters	T.D. 2033	Dry
The Texas	1-Starnes	GH&H	T.D. 2304	Dry
Renee	1-Walker	Bezane	T.D. 2005	Dry
Anzac et al	1-Alexander	Quigley	1623-2143	10.1M
Rex Tex Py Tex	1-Byrd	Sprogue	1849-1953	31

Eastland County

Root et al	4-Watson	H&TC	3640-3647	75&2¼M
Heath et al	1-Woods	McLennan	T.D. 1685	Dry

Shackleford County

The Texas	1-Scarbrough	BAL	T.D. 992	Dry
Lee et al	1-Humble	BAL	T.D. 849	Dry
Kouri et al	1-Beam	H&TC	T.D. 2003	Dry
Roeser-Pendleton	2-Cook	ET	T.D. 1574	Dry
Brown et al	1-Mathews	ET	T.D. 1020	Dry
Crabb-McNeil et al	1-City of Albany	TP	T.D. 1162	Dry
Abbott	1-Barkley	BAL	T.D. 400	Dry
Hogan et al	1-Flippen	TP	T.D. 1303	Dry
Petroleum Prod	1-Mathews	ET	1131-1160	60
Skelly	1-Mathews	ET	1149-1151	60
Roeser et al	6-Cook	ET	1353-1360	40
Deaner et al	1-Haevey	T&P	1648-1652	18
Cosden	2-Davis	TP	1475-1488	17
Hope	10-Davis	TP	1490-1505	90

NORTH TEXAS

Archer County

Bridwell	3-Wilson	Geraldine	1578-1583	60
Golhke et al	5-Wilson	Geraldine	1557-1567	75
Johnson et al	4-Wilson	Geraldine	1546-1560	240
Johnson et al	6-Wilson—	Geraldine	1559-1569	150
Petroleum Prod	2-Wilson	Geraldine	1575-1577	225
Petroleum Prod	3-Wilson	Geraldine	1571-1580	150
Sheldon et al	1-Jones	Rodemeyer	T.D. 1651	Dry
Hutchinson	1-Fee	ATNCL	T.D. 1177	Dry
Consolidated	4-Kinder	C&P	T.D. 1325	Dry
Young et al	1-Wells	BBB&C	T.D. 1402	Dry
Consolidated	2-Tyles	Meade	T.D. 1443	Dry
Richardson	1-Richardson	McCune	T.D. 1319	Dry
Long	1-Conner	Tomilson	T.D. 1151	Dry

Denton County

Harty	1-Phillips	Williams	T.D. 709	Dry
Hudson Bros	1-Freittock	White	T.D. 724	Dry

Montague County

Carter et al	Bouldin	Chacon	810-814	35
Carter	1-Jones	Donohoo	785-802	100

Wichita County

Everett	2-Cooper	WCL	T.D. 2016	Dry
Long et al	1-Mitchell	Castleman	T.D. 1954	Dry
Hines	1-River Bed	Scott	T.D. 2007	Dry
Merrick Drlg	1-Ferguson	Lewis	T.D. 1850	Dry
Lomax Bros	3-Etheridge et al.	PPCSL	T.D. 1289	Dry

Wilbarger County

Kimmell et al	1-Conn	H&TC	T.D. 903	Dry
Phillips	18-Waggoner	H&TC	2329-2331	30
Phillips	8-Waggoner	H&TC	2402-2406	69
Barkley-Meadows	3-Waggoner	H&TC	2352-2374	225
Fain-McGaha	4-Waggoner	H&TC	2442-2450	53
Staley-Wynne	1-Waggoner	H&TC	1884-1907	193
The Texas	8-Waggoner	H&TC	2354-2371	50

Young County

Gwynn	1-Hunkel	BBB&C	1140-1143	60 (12 Hrs.)

Company	Well / Farm	Location / Survey	Depth	Init. Prod.
Allday	4-Johnson	Sargent	540-588	25
Cunningham et al	6-Hawkins	TE&L	490-516	30
Cunningham et al	7-Hawkins	TE&L	492-521	70
Shappell	8-Johnson	Sargent	516-524	6
Shappell	9-Johnson	Sargent	502-514	8
Riggs et al	5-McKinley	TE&L	576-589	130
Wichita Prod	1-Farmer	Anderson	T.D. 1150	Dry
Madden-Hunt	3-Kilcrease	TE&L	T.D. 1809	Dry
The Texas	1-Ceeg	Matthews	T.D. 851	Dry
Reed-Wooten	1-Zinn	Porter	T.D. 645	Dry
Cooper et al	1-Adams	Sallie	T.D. 600	Dry
Panhandle	1-Hawkins	TE&L	T.D. 1914	Dry
Wise-Jackson	1-Rowley	TE&L	T.D. 605	Dry
Bowen	1-Brooks	TE&L	T.D. 637	Dry
Atlantic-Casey	1-Branner	TE&L	T.D. 1926	Dry
Kerbow-Albright	1-Badon	Sallie	T.D. 700	Dry
Kelleher et al	1-Stratten	BBB&C	T.D. 602	Dry

PANHANDLE

Gray County

Empire	1-Cobb	I&GN	2455-2633	25M
Texas	1-Thut	I&GN	2436-2560	11½M
Holbrook et al	1-Saunders	H&GN	T.D. 3138	Dry
Danciger	7-Jackson	H&GN	2779-3000	10M
Gulf	5-Bowers	H&GN	2295-3225	60&5M
Operators	2-Jackson	H&GN	2851-2964	2500
Phillips	1-Son	H&GN	T.D. 3210	Dry
Phillips	2-Son	H&GN	2575-3071	40&2M
Sun	1-Jackson	H&GN	3135-3145	120
Sullivan et al	1-Chapman	H&GN	2300-T.D.	23M
Danciger et al	1-Morse	H&GN	2469-2520	150
Empire	1-Cobb	H&TC	T.D. 2177	3½M

Hutchinson County

Dixon Creek	1-Burnett	I&GN	3045-3160	30
U. S. Oil Corp	1-Johnson	A&B	T.D. 2580	70M

Wheeler County

Clark et al	1-Purcell	H&GN	1710-1883	11M

WEST TEXAS

Brewster County

Mid-Kansas	1-Turney	T&STL	T.D. 3480	Dry

Crockett County

Cosden	1-Purner	I&GN	T.D. 2575	Dry
Grayburg	3-Thompson	I&GN	1062-1096	30

Culberson County

Deep Rock	2-Kloh	T&P	T.D. 1738	Dry

Howard County

F. H. E.	3-Roberts	W&NW	1843-1869	75

Loving County

Owen-Slean	1-Johnston	T&P	T.D. 4808	Dry

Pecos County

Michaelson et al	1-Pecos R. Bed.	....	T.D. 2012	Dry
Rowan et al	1-Blackmar	H&GN	T.D. 2214	Dry
Humble	7-Smith	TC	1627-1693	300
California	12-Smith	TC	1270-1455	138 (1 Hr.)
Mid-Kansas et al	9-Smith et al.	TC	1206-1326	562 (1 Hr.)
Mid-Kansas et al	17-Yates	I&GN	1115-1240	160

Reagan County

White et al	1-Shaffner	Steling	T. D. 2886	Dry

Reeves County

Vacuum	1-Grisham et al	PSL	T.D. 3648	Dry

Tom Green County

Halbert	2-Johnson	Keifer River	T.D. 1205	Dry

Upton County

Evans-Wilburn	1-Univ.	Univ.	T.D. 2305	Dry
Humble	8-Ricker	Denton	2268-2272	357 (20 Hrs.)

Winkler County

Cranfill-Reynolds	2-Hendricks	PSL	2761-2762	10000
Humble	1-Hendricks	PSL	2806-2843	407
Southern Crude	2-Hendricks	PSL	2702-2765	7172
Atlantic	4-Hendricks	PSL	2754-2965	5500
Roxana	4-Hendricks	PSL	2765-2893	1406
Atlantic	6-Hendricks	PSL	2875-3025	3130
Gulf Prod	11-Hendricks	PSL	2837-3050	1600
Humble	12-Hendricks	PSL	2949-2950	11000
Humble	6-Hendricks	PSL	2932-2961	1900
Roxana	7-Hendricks	PSL	2860-3022	1230
Republic Prod	5-Hendricks	PSL	2758-2951	1900

Completions in North Louisiana and Arkansas, Week Ended May 3, 1928

Louisiana—Webster—Cotton Valley

Company	Well	Location	Depth	Yield
Ark. Nat. Gas Co.	Mitchell No. 1	30-23-9	2688	26M gas
S. A. Lane	Miles No. 1	24-17-9	1469	dry, aband.
Magnolia Pet. Co.	D. Mitchell No. 1	31-23-9	2664	29M gas

Bossier Parish—Curry Junction

J. R. Bahan	Kilgore No. 1	31-23-11	3062	38M gas
Olmeda Gas Co.	Mayer No. 1	30-16-11	1914	2M gas

Caddo Parish

Dixie Oil Co.	Robertshaw No. 81	14-21-15	2702	95 bbls.
Magnolia Pet. Co.	Hampton A-8	15-21-15	4039	abandoned
Greenwood Prod. Co.	Cushman-Bridges No. 1	15-18-16	923	abandoned
Magnolia Pet. Co.	W. M. Bell No. 2	6-17-16	3225	dry, aband.

Bossier Parish

Palmer Corp.	W. H. and C. B. Hodges No. B-10	25-16-12	19876	7M gas

Union Parish

Indus. Gas Co.	Lewis No. 1	14-20-3E	2200	5M gas

Ouachita Parish

United Carbon Co.	Jake Davis No. 1	21-20-4E	2148	29M gas
Southern Carbon Co.	Fee No. 50	18-19-4E	2178	4M gas

Richland Parish

Company	Well	Location	Depth	Yield
W. C. Feazel	Noble No. 1	36-16-5E	2465	21M gas

East Texas—Harrison County

Nick Barbare	Vaughn No. 2	W. R. Anderson H. R. S.	969	abandoned
Jim Clark	Furrh No. 4, J. Short	H. R. S.	994	2M gas

Panola County

Beckman & Freeman	S. M. Burns No. 1	Alex Birdsong, H. R. S.	1043	6M gas
Natural Gas & Prod.	T. C. Adams No. 5	Evans Bracken, H. R. S.	975	5M gas
Texas Company	E. W. Brumble No. 3	Jack Womack H. R. S.	1003	2M gas
M. A. Smith	W. C. Agurs No. 2	Jacob Womack H. R. S.	1091	abandoned

Arkansas—Union County

Magna Prod. Co.	Rowland No. 2	14-17-14	2974	108 bbls.
Magna Prod. Co.	Townsend No. 1	10-17-14	2680	abandoned
Rushing et al	Gregory No. 1	11-17-14	3210	4000 bbls.
Mountz	Pratt No. 6	8-18-15	2205	16 bbls.

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended May 5, 1928

OKLAHOMA

Beckman County

Company	Well No. Farm	Location
M. T. C.	1-Abbott	NEc 35-9-22 W OWD

Carter County

Cotton Belt	7-Rexroat	NWc NW NE SW 10-4-2 W
Boring et al	4-Walker	SWc SE NW 10-4-2 W
Boring et al	1-Walker	NWc SW SE NW 10-4-2 W OWD
Franklin	1-Drake	NWc SW 7-1-3 W

Cotton County

Cullum et al	1-Chalmers	NWc SE 2-2-10 W
Jenkins et al	2-Smith	NEc SE SW SE 34-1-10 W

Creek County

Tidal	1-Robinson	NEc SW 20-17-7 E
Twin State	1-Coachman	SWc NE 20-17-7 E
Taylor et al	1-Oglasby	NEc NW SW 9-18-9
Bartlett et al	2-Miller	NEc NW NW 33-18-9
Tibbens	3-Jackson	NEc SW 4-18-12
Fusselman	5-Pickett	C NE SW 33-17-11
Devonian et al	1-Pickett	SEc NW 3-16-11
Creekmorne et al	2-Gilles	SEc NW NW 14-16-11

Grady County

Meridian	1-Serrata	NEc NW SW 25-5-8 W

Jefferson County

Magnolia	1-McKenzie	NEc SW SE 23-6-6 W

Kay County

Gypsy	4-Gardner	SWc NE SW 28-25-1 W OWD
Martin et al	1-House	NEc SW 32-27-1 W
Industrial	1-Deefner	C SW NE 2-27-1 W OWD
Industrial	1-Wright	C SW SW 1-27-1 W

Logan County

Sinclair et al	1-Murphy	SWc SE 17-19-4 W

Muskogee County

Sommerville	2-Graver	NWc SE NE SE 4-13-19 E OWD
Douglas Drlg	1-Lee	SWc NW 7-14-19 E
Whaley et al	2-Crittenden	SWc SE NE 6-14-19 E
Hale-Ford	6-Clark	CWL E ½ NW SE 6-14-19 E
Wheeler et al	1-Price	NWc NE SW 4-14-19 E
Morrison et al	1-Drake	CSL SW NE 12-14-18 E
Hale-Harris et al	1-Callahan	SEc SW NW 11-14-18 E
Mussellem	5-Franklin	CSL SW SW 22-14-16 E
Tidal	9-Sanders	NWc SE SW 34-15-18 E
Mussellem	1-Lot-30, Blk-18	SWc SE SE SE 28-15-18 E
Sommerville	1-Coleman	SEc NW SW 18-15-15 E
Bryan-Emery	2-Barnett	SWc SE NE 8-15-15 E
Boyle	7-Barnett	NWc NE SE 8-15-15 E

Okmulgee County

Lowerre et al	1-Eubanks	SWc NE NE 17-13-14 E OWD
Mussellem	16-Flint	CWL NE SW 26-14-14 E
Wallace	9-Colbert	NEc NW SE 14-14-14
Florine Drlg	1-Grayson	NEc 11-11-12
Wheeler et al	3-Morgan	CEL NE NW 23-13-11
De Witt et al	1-Cooper	SWc SE SE 35-16-13

Osage County

Osage Synd	11-	NEc SE SW NW 7-21-9
Phillips	4-	SWc NW NW 1-25-11
I. T. I. O.	7-	SWc NE 26-25-9
Petroleum Drlg	22-	SEc NW SW 25-26-8
Lewis Prod. et al	1-	NEc 22-26-6
Phillips	2-	SEc SW SW 1-27-5

Pontotoc County

Portland	1-Staritt	NWc NE SE 23-4-7 E
Roxana	1-Oliver	SWc SE NW 32-5-7 E
La Salle	4-Copeland	CE ½ SW¼ 28-5-5 E

Pottawatomie County

Westheimer et al	2-McKay	NWc SW NW 24-7-4 E
Superior	2-Cloude	SWc NW NW 24-7-4 E
Independent-Darby	2-Freid	SEc NE NE 23-7-4 E
Pierce	3-Davis	SWc NE 25-7-3 E

Seminole County

Blackwell	1-Bennett	SWc NW SE 11-7-6 E
Continental	6-Cosar	NEc NW 36-8-6 E
Continental	1-Cosar	SEc SW 25-8-6 E
Magnolia	9-Sparks	NWc SW 11-9-5 E

Stephens County

Petroleum Prod	2-Brown	SWc NW 7-2-7 W
Pace	1-Massey	NWc SE 14-2-8 W
Pace et al	2-Wilson	SEc NE SE NE 12-2-8 W
Smith	1-McCollom	NWc NE SE 25-1-4 W
Humble	5-Peddycort	SWc NE SE NE 25-1-4 W
Magnolia	6-Green	NEc NW 13-1-4 W
Faucett-Holmes	1-Johnson	NWc SE SW 18-1-8 W

Tulsa County

Ellen	4-Island	NEc NW NE 25-18-14
Glidden	1-Wray	SWc NW 35-19-13 OWD

KANSAS

Butler County

Allison et al	2-Pierce	NWc NE NE 28-25-4 E
Davis-Hazlett et al	6-Lewis	SWc SE SW 3-27-6 E
Garden et al	2-Sluss	SEc NE NW 6-27-6 E
Dixie	2-Marshall	NEc NW NW 10-27-6 E

Cowley County

Texas	4-Hittle	NEc SE 21-31-4 E
Elliott et al	2-Elliott	NWc SE NE 17-31-5 E
Roth-Faurot	1-Bement	NWc 21-31-5 E
Skelly	1-Blankey	SWc NW SE 31-31-6 E
Barnsdall	1-Wagner	SEc SW SE 6-33-3 E
Gypsy	1-Jennings	SEc NW SW NW 8-33-3 E

Greenwood County

Rhodes et al	1-Barnard	SEc SW NE 33-22-10 E
Empire	9-Ott	SWc NE NW 25-22-12 E
Empire	12-Schwab	NEc SW NE 25-22-12 E
Empire	5-Schwab	SEc NE SW 30-22-13 E
Skelly	3-Schwab	SEc SW NE 30-22-13 E
Polhamus et al	1-Gopher	SWc SE SW 35-25-10 E
Smith-Downard	1-Dickinson	SEc NE NE 30-25-12 E
Brinegar et al	1-Lawrence	NWc 10-27-13 E

McPherson County

Sinclair	1-Clark	C NE SE 31-18-2 W

Marion County

Company	Well No. Farm	Location
Glidden et al	1-Riffell	SEc SW SW 10-17-4 E
Phillips	1-Ireland	NEc NW SE 7-19-4 E

Reno County

Empire-Marland	1-Williams	SEc NE 5-26-4 W

Russell County

Keys et al	1-Mermis	NEc SE 32-13-15 W
Keys et al	2-Mermis	NWc NE SE 32-13-15 W

Sumner County

Palmer-Barnsdall	8-Weinrich	SEc NE NW NW 23-32-2 E
Palmer-Barnsdall	9-Weinrich	CWL NE NW 23-32-2 E
Wentz et al	1-Crane	SEc NE NW 23-34-2 W

TEXAS
NORTH AND NORTH CENTRAL

Archer County

			Survey
Sun	1-Anderson	Sec-140	Carson
Shasta	1-Wilson	Sec-1	BBB&C
Petroleum Prod	5-Wilson	Blk-13	Geraldine
Young	2-Taylor	Abstract-428	SP
Hart et al	2-Moss	Sec-1, Abstract-199	HT&B
Stump-Hines	1-Wallace	Blk-11	CCSL

Brown County

Evans	1-Martin	Sec-10	HT&B
Amerada	1-Plumer	Sec-70	HT&B
Henshaw	2-Cross	Blk-624	Kenney
Henshaw	12-Bush	Blk-624	Kenney
Richards	7-Curry	....	Betts
Blanchard et al	1-Eubanks	Blk-141	Mitchell
Humble	1-Lewis	Blk-143	Mather
Bradstreet	1-Eubanks	Blk-141	Mitchell
Baker et al	1-Eubanks	Blk-141	Mitchell
Conway Bros	1-Newton	Blk-149	Miller
Bradstreet	11-Stout	Blk-155	Smith
Midland	3-Butler	Blk-783	Benson
Anna Belle	2-Hickman	Blk-783	Benson
Gilman et al	3-Hickman	Blk-783	Benson

Coleman County

Roth-Faurot	3-Stevens	Blk-57, Coleman Co.	Sch. Land
Barbara-Ross	1-Griffin	Blk-744	Lopez
Roth-Faurot	1-Nixon	Sec-50, Blk-703	Burnet Co., Sch. Ld.
Continental et al	1-Smith	Sec-13, Blk-1	GH&H
Williams	1-West	Blk-14	Vaughn

Cooke County

Fletcher	1-Jones	Abstract-462	Hill
Russell et al	1-Marshall	Abstract-48	Burns
Hooser	4-Montgomery	....	McClyman

Cottle County

Skelly	1-Cannon	Sec-15	Knott

Henderson County

Heine-Smith et al	1-Cox	Blk-28	Brown

Limestone County

Reiter-Lewis et al	1-Ward	....	Varella

McCulloch County

Kyle et al	1-Walker	Sec-91	H&TC

Montague County

Lanfair et al	1-McNabb	Sec-17	McCollier

Shackleford County

Archer	1-Poindexter	Sec-61, Blk-12	T&P
Tannehill et al	4-Mathews	Sec-33	ET
Skelly	3-Mathews	Sec-33	ET
Skelly	4-Mathews	Sec-33	ET

Wichita County

Shappell	1-Lewis	Blk-20	KWVFL
Bridwell	1-Griffin	....	Jordan
Long-Texas	1-Mitchell	Blk-19	Castleman

Wilbarger County

Empire	1-Waggoner	Sec-41	MEP&P
Fain-McGaha	6-Waggoner	Sec-24, Blk-4	H&TC
Fain-McGaha	7-Waggoner	Sec-24, Blk-4	H&TC
The Texas	2-Waggoner	Sec-43, Blk-?	MEP&P
Phillips	2-Waggoner	Sec-30, Blk-4	H&TC
Consolidated	1-Waggoner	Sec-5, Blk-5	H&TC

Young County

Scott et al	1-Kirby	Sec-1934	TE&L
Parker et al	2-Johnson	Blk-4, Abstract-253	Sargent
Stafford et al	2-Langston	Sec-1490	TE&L
Cunningham et al	6-Hawkins	Sec-1914	TE&L
Cunningham et al	7-Hawkins	Sec-1914	TE&L
Shappell	10-Johnson	Abstract-253	Sargent
Kleiner-Hill et al	7-Langston	Sec-1490	TE&L
Maddon-Hunt	3-Kilcrease	Sec-1809	TE&L
Bullington Lee et al	2-Boone	Abstract-34	BBB&C
Shappell	1-Cox	....	Sallie
Goldsmith	1-Miller et al	Sec-3404	TE&L
Cunningham	1-Duncan	Sec-1998	TE&L
Forbess	1-Washburn	Abstract-1714	Wann

WEST TEXAS AND PANHANDLE

Carson County

Denson	1-Cobb	NW NEc Sec-184, Blk-3	I&GN
McMann	1-Percival	NE NW NE Sec-199, Blk-3	I&GN OWD
McMann	2-Percival	NWc NE Sec-199, Blk-3	I&GN

Crockett County

Republic Prod	1-Powell	CNL NE Sec-52, Blk-BB	....

Gray County

Travis	1-Morse	NEc SW Sec-3, Blk-26	H&GN
Travis et al	1-Webb	NWc SW Sec-43, Blk-25	H&GN
Parker et al	2-Parker	Center of	Lynch

Howard County

Marland	3-Chalk	SW NW SW Sec-124, Blk-29	W&NW
F. H. E.	2-Roberts	SWc NE Sec-136, Blk-29	W&NW
Magnolia	8-Roberts	NW SW SW Sec-136, Blk-29	W&NW

Irion County

Powell et al	1-Horney	NE NW NE Sec-2, Blk-3	H&TC

Menard County

Duffey et al	1-Eckhardt	C SW Sec-10, Blk-2	TW&NG

(Continued on Page 46)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended May 5, 1928

(*Continued from Page 45*)

Company	Well No. Farm	Location	Survey
Reagan County			
Moody	1-Walters	C NW SE Sec-4, Blk-1	Henderson
Wheeler County			
Rook	2-Linkey	C SW Sec-5, Blk-24	H&GN
Winkler County			
Humble	5-Hendricks	NE SE SE Sec-32, Blk-26	PSL
Humble	6-Hendricks	NE NE NE Sec-32, Blk-26	PSL
Winkler Prod	1-Hendricks	NWc Sec-33, Blk-26	PSL
Humble	1-Hendricks	NE NW SW Sec-39, Blk-26	PSL
Humble	2-Hendricks	NW NE SW Sec-39, Blk-26	PSL
Landreath Prod	1-Hendricks	SE SW NW Sec-39, Blk-26	PSL
Skelly	2-Hendricks	NE NW NE Sec-40, Blk-26	PSL
Skelly	3-Hendricks	SE SW NE Sec-40, Blk-26	PSL
Skelly	4-Hendricks	NE NW SE Sec-40, Blk-26	PSL
Skelly	5-Hendricks	SWc SE Sec-40, Blk-26	PSL
Skelly	1-Hendricks	SW SE NW Sec-39, Blk-26	PSL
Republic Prod	8-Hendricks	SEc SW Sec-45, Blk-26	PSL
Southern Crude	1-Hendricks	CEL SE Sec-5, Blk-B-12	PSL

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended May 5, 1928

	May 5 Week Ended Loc.	Rigs	Drg.	S.D.	Total	April 28 Loc.	Rigs.	Drg.	S.D.	Total
OKLAHOMA										
Burbank	1	4	13	..	18	..	4	15	..	19
Other Osage	2	11	15	2	30	2	14	14	1	31
Bristow-Cushing	4	6	29	10	49	5	5	32	11	53
North Oklahoma	7	3	55	44	109	8	5	53	45	111
South Oklahoma	11	8	103	18	140	9	6	100	14	129
Muskogee	..	14	61	20	95	..	8	64	17	89
Okmulgee-Bristow	12	28	79	26	145	12	30	74	24	140
Seminole Dist	25	26	162	24	237	24	22	176	23	245
Total Oklahoma	62	100	517	144	823	60	94	528	135	817
KANSAS	38	67	141	64	310	37	60	144	60	301
TEXAS										
Central	..	76	237	168	481	..	86	227	189	502
Panhandle	..	66	98	69	233	..	68	87	77	232
N. Central	..	61	125	22	208	..	63	111	24	198
West	..	110	203	161	474	..	101	180	167	448
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	314	688	439	1,441	..	319	630	476	1,425
New Mexico	..	8	20	24	52	..	10	16	26	52
GRAND TOTAL	100	489	1,366	671	2,626	97	483	1,318	697	2,595

Big Gasser Brings Interest Back to Seal Beach

LOS ANGELES, May 5 ALAMITOS HEIGHTS area of the Seal Beach field, where townlot drilling was active some months ago, is back in the limelight.

California Eastern's Horowitz 1, which was being plugged back, blew in as a big gasser, making around 20,000,000 cubic feet of gas, in addition to 50 barrels of 26.4 gravity oil.

This well had been drilled to a total depth of 5503 feet, where it had been put on production, which did not prove satisfactory in volume. Steps were taken to plug back, and about this time company officials held up further information.

It is known that the last string of pipe was perforated, it is believed, just above the Bixby zone, which has never been tested for either oil or gas.

Arrangements were made with Pan American Petroleum Co. to run 8,000,000 cubic feet of the gas daily through its natural gasoline plant. It has a gasoline yield of about a gallon to the thousand cubic feet. Much of the remaining gas output is being used at wells operating with the gas lift and as fuel. The pressure at the well exceeds 1000 pounds.

If it develops that this heavy gas output is coming from above the Bixby zone, a number of wells near the big gasser will try to develop the new horizon. There is a bare possibility that the well is a freak, but some feel that further activity is in store for this portion of Seal Beach field.

Associated Oil Co. this week let it be known that its No. 100 Lloyd at Ventura avenue would not be completed at slightly below 7500 feet, as planned. It will drill ahead as far as possible. May 4 total depth was 7540 feet and, if no mechanical troubles intervene, the hole probably will go to 8000 feet. The hole is reported in good condition. Thirty-four wells are actively drilling at Ventura avenue, with 16 locations and 7 rigs, while 7 drilling wells are idle. Eight wells are shut in completely.

The production increase at Long Beach for this week is not expected to exceed 3000 barrels, in spite of the completion of 9 producers averaging around 1500 barrels each. Old wells in the field registered a decline of nearly 2000 barrels, and two of the deep sand wells had to be taken off production. Shell Co. well had to be killed as it was producing mud coming from a nearby drilling well. Again, the older deep sand producers are declining at a greater rate than some three weeks ago.

Of the 9 new producers at Long Beach this week, 5 were deepened holes and 4 newly drilled wells. Six wells were wet and had to be killed for new cementing jobs. Drillers for the deep sand in this field are still having trouble in securing good water shut off jobs. In spite of precautions taken, many of the producers make considerable water, requiring that the production be treated before going into the pipe line.

Both wells at Potrero, the field recently proved by Associated Oil Co., were still closed in May 4. The oil producer was waiting for completion of storage and probably will be on production again around first of the week.

The gasser is also shut in, standing full of mud. Just a little oil came from this hole in a spray, while the gas produced was dry. Due to its location just outside of the city limits of Los Angeles, the gas well will be valuable, if it holds up. Some leasing has been reported in the townlot area near the new field, but so many dry holes were drilled in this area last year that no big drilling campaign is expected.

There are 17 actively drilling wells at Rincon, the new field in Ventura County, not counting the idle rigs, and daily production from eight producers hovers around 2000 barrels.

Pan American recently put State 1 on a production test at 3957 feet through 2½-inch tubing and the well produced but 95 barrels of 28.4 gravity oil in 24 hours. It was pumped as there was not sufficient pressure to make it flow. Casing was cemented at 3906 feet. Chanslor-Canfield-Midway Oil Co. is still trying to make Hobson B-1 produce again after being killed. The string of 4½-inch was pulled to replace a bad joint.

Experiments With Gas Corrosion

HOUSTON, May 4.—Operators in west Texas and elsewhere will watch with interest the experiments now being conducted by Prairie Oil & Gas Co., to combat sulfur gas corrosion in the Panhandle district.

The Prairie will install on its Johnson A-3 lease, Sec. 64, block 36, Hutchinson county, a working tank 8 feet high and 16 feet in diameter with reinforced concrete walls extending three feet into the ground. The tank will be covered with asbestos and wood.

H. A. McKim has been appointed assistant manager of the motor vehicle department of the Standard Oil Co. of California, at San Francisco.

Winkler Operators Discount Water Effect on Ultimate Yield

HOUSTON, May 3

APPEARANCE of five per cent emulsion in the C-2 well of Cranfill & Reynolds, Inc., southwest quarter of sec. 33, block B-26, Winkler county, had brought encroachments to all parts of the Hendricks development area, May 1. Tests of the emulsion showed, however, that the intrusion came from a nearby drilling well and did not result from bottom hole water.

It marked the first encroachment in the prolific north end territory, although about 90 wells previously had been making varying percentages of water with the oil produced in older parts of the field.

As the C-2 well is structurally higher than most completions in the north end group, it is believed that drilling water settling from above the pay, or top water from a rotten dolomite trash zone brought about the intrusion.

Analysis of the emulsion later showed the presence of bariod, which was used in a nearby test of the Marland Production Co. to thicken rotary drilling mud. This proved that water causing the emulsion had infiltrated through the highly porous formation to the producing well.

Similar influences on earlier encroachments in older parts of the field have been generally recognized. Most operators believe that bottom hole water has intruded in only a few wells.

The C-2 well, which came in April 14, making 450 barrels an hour against 600 pounds back pressure, had not been exploited above 8000 to 9000 barrels daily. It is one location east of the Cranfill & Reynolds C-1, completed March 1, which was estimated good for open flow production of 50,000 barrels daily, but was never exploited above 16,000 barrels daily.

C-1, on a half hour test for prorating purposes, May 2, is reported producing 850 barrels, or at a rate of more than 40,000 barrels daily. It has shown no water.

Together, the C-1 and C-2 wells of Cranfill & Reynolds had produced roundly 1,000,000 barrels to the end of April. This was an average of about 50,000 barrels an acre for the 20-acre lease on which they were drilled.

When water appeared in C-2 its flow was pinched to 5000 barrels daily. The amount of water produced with the oil was cut down, but tests showed about 5 per cent remaining. Other wells in this part of the field are expected to show intrusions quickly. It is assumed, however, that the appearance of water will create an operating problem more than it will affect ultimate recoveries.

BULLETIN

(By Telegraph)

TULSA, May 7.—The advisory conservation committee of the Mid-Continent Oil & Gas Association passed a resolution today urging operators in the Allen field, in Oklahoma, and also those in Russell county, Kans., to appoint committees in their respective areas to restrict drilling. The work of these committees, it is suggested, can be patterned after that of the Seminole shutdown committee.

AS OPERATORS attribute high water percentages in the Winkler field to other causes than bottom hole encroachments, they feel that more careful drilling practice in the future will minimize intrusions. Considering the field as a whole they take the position that intrusions can be held to present percentages, or even reduced, by reworking wells known to be producing upper waters.

Vertical intercommunication from one pay level to another[1] in the lime was considered in the early stages of encroachment to have caused the appearance of what seemed to be bottom water.

Chemical analyses later established that, instead of coming from bottom hole sources, the water actually had settled from above, because of an equilibrium of gas pressure which made this possible.

Sources of top water were the rotten dolomite trash zone, above the lime, which produced some of the flashy wells completed in the early stages of Winkler development, and drilling water which found outlet through the highly porous lime horizon to wells already on production. Presence of edge water was established in only a few wells and these were patently down dip on the general field structure.

Natural water drive conditions, supplemented by heavy gas in the top of the lime horizon, are found in the Winkler territory. It is only natural, therefore, in areas where water lies back of the oil down the dip of the structure, that "coning" would result from unrestrained exploitation and pressure losses. This condition is further influenced by the great quantities of gas taken out of the underground reservoirs.

It was recently estimated at a railroad commission hearing at Austin that the gas blown into the air, or used under boilers, in the Winkler field totaled 465,000,000 cubic feet daily. Most of this gas was blown into the air, as fuel requirements are limited and there are no raw natural gasoline plants in the field.

THE turn of the month found 91 wells making varying percentages of water in the Winkler field as compared with 77 such wells, April 20. Wells making water averaged roundly 1160 barrels each daily, May 1, as compared with 1210 barrels average for the smaller group 10 days previously.

Wells that had not been affected by water averaged about 2800 barrels each daily, May 1, as compared with 1985 barrels for the group similarly unaffected April 20. Some of the wells had been opened, however, to greater flows than their previously pinched conditions had permitted.

[1] NATIONAL PETROLEUM NEWS, Page 28, Feb. 15, 1928.

DIVISION OF WINKLER PRODUCTION BY COMPANIES, APRIL 30.

Winkler production by companies, April 28, one week before the effective date of the railroad commission order limiting the field to a maximum of 150,000 barrels daily, was divided as follows:

Company	Total producing wells	Number making water	Barrels daily production
Atlantic Oil Producing Co.	15	11	44,516
California Co.	7	5	5,026
Cranfill & Reynolds, Inc.	4	2	28,040
Gulf Production Co.	10	6	17,511
Humble Oil & Refining Co.	16	11	45,407
Independent Oil & Gas Co.	15	9	14,071
Landreth Production Co.	6	4	9,855
Magnolia Petroleum Co.	6	3	3,243
Murchison & Cranfill	5	1	800
Pure Oil Co.	9	6	4,357
Republic Production Co.	4	1	14,739
Roxana Petroleum Corp.	18	11	32 058
Southern Crude Oil Purch. Co.	26	16	32,484
Texon Oil & Land Co.	4	3	6,150
Totals	145	91	258,257

Effect of Water Intrusion in Winkler County Wells

Company-Well	Sec.	Blk.	Daily Prod. In Bbls.	Water Percentage
Atlantic Oil Producing Co.				
Hendricks 1-A...	34	B-5		
Hendricks 3-A...	34	B-5		No. 5-5%
Hendricks 4-A...	34	B-5		
Hendricks 5-A...	34	B-5		
Hendricks 6-A...	34	B-5	2,234	Pinched
Hendricks 1-D...	29	B-5		Nos. 1 and 2-11%
Hendricks 2-D...	29	B-5		
Hendricks 3-D...	29	B-5		
Hendricks 4-D...	29	B-5	3,944	Pinched
Hendricks 1-E...	41	B-5		18%
Hendricks 4-E ..	41	B-5	3,944	Pinched
Cranfill & Reynolds				
Hendricks 1.....	35	B-5	None	100%
Gulf Production Co.				
Hendricks 3.....	34	B-5	820	20%; pinched
Hendricks 4.....	34	B-5	2,310	30%; pinched
Hendricks 5.....	34	B-5	1,900	12%; pinched
Hendricks 6.....	34	B-5	1,600	20%; pinched
Hendricks 7.....	34	B-5	730	4%; pinched
Hendricks 13....	34	B-5	577	8%; open
Humble Oil & Refining Co.				
Hendricks 1-A...	34	B-5		62%; open
Hendricks 4-A...	34	B-5		65%; open
Hendricks 5-A...	34	B-5		15%; open
Hendricks 7-A...	34	B-5		20%; open
Hendricks 8-A...	34	B-5		20%; open
Hendricks 12-A..	34	B-5	18,769	45%; open
Hendricks 6-A...	41	B-5		75%; open
Hendricks 10-A..	41	B-5	2,272	20%; open
Hendricks 1-B...	29	B-5		80%; open
Hendricks 2-B...	29	B-5		90%; open
Hendricks 6-A...	29	B-5	1,493	13%; open
Independent Oil & Gas Co.				
Hendricks 1-A...	34	B-5		45%; open
Hendricks 2-A...	34	B-5		
Hendricks 3-A...	34	B-5		
Hendricks 4-A...	34	B-5		Nos. 2 and 5-1%; open
Hendricks 5-A...	34	B-5		
Hendricks 6-A...	34	B-5		
Hendricks 7-A...	34	B-5		No. 8—90%
Hendricks 8-A...	34	B-5	7,718	BS&W; open
Howe 1.....	44	B-5	258	5%; open
Vardeman 1.....	41	B-5		75%; open
Vardeman 2.....	41	B-5		65%; open
Vardeman 4.....	41	B-5		90%; open
Vardeman 5.....	41	B-5	4,661	40%; open
Landreth Production Co.				
Hendricks 1-A...	29	B-5	475	74%; open
Hendricks 2-A...	29	B-5	585	88%; open
Hendricks 3-A...	29	B-5		48%; open
Hendricks 4-A...	29	B-5	3,069	30%; open
Magnolia Petroleum Co.				
Hendricks 1.....	29	B-5	1,700	20%; open
Hendricks 2.....	29	B-5	150	60%; open
Hendricks 6.....	29	B-5	380	22%; open
Murchison & Cranfill Bros.				
Hendricks 3-B...	35	B-5		15%
Hendricks 4-B...	35	B-5	705	None

Company-Well	Sec.	Blk.	Daily Prod. In Bbls.	Water Percentage
Pure Oil Co.				
Hendricks 1-A...	41	B-5		85%
Hendricks 2-A...	41	B-5		28%
Hendrikcs 3-A...	41	B-5		50%
Hendricks 4-A...	41	B-5		75%
Hendricks 5-A...	41	B-5	2,880	None; pinched
Hendricks 2-B...	34	B-5		5%
Hendricks 3-B...	34	B-5		5%
Hendricks 4-B...	34	B-5	3,320	None; pinched
Republic Production Co.				
Hendricks 1.....	41	B-5		10%
Hendricks 4.....	41	B-5	8,165	None; pinched
Roxana Petroleum Corp.				
Hendricks 1-B...	29	B-5	846	70%; open
Hendricks 2-B...	29	B-5	214	30%; open
Hendricks 1-C...	29	B-5	2,929	60%; open
Hendricks 2-C...	29	B-5	None	Dead
Hendricks 4-C...	29	B-5	1,797	1%
Hendricks 5-C...	29	B-5	370	60%; open
Hendricks 7-C...	29	B-5	1,103	1%; open
Hendricks 1-D...	41	B-5	1,272	94%; open
Hendricks 2-D...	41	B-5	1,414	63%; open
Hendricks 3-D...	41	B-5	1,703	18%; open
Hendricks 4-D...	41	B-5	1,097	8%; pinched
Southern Crude Oil Purchasing Co.				
T67-1-A-1.....	42	B-5	187	15%; open
T67-1-B-1.....	44	B-26		3%; open
T67-1-B-2.....	44	B-26	700	3%; open
T67-1-C-1.....	33	B-5		28%; open
T67-1-C-2.....	33	B-5		10%; open
T67-1-C-4.....	33	B-5	425	18%; open
T67-1-C-3.....	33	B-5		27%; open
T67-1-C-5.....	33	B-5	625	5%; open
T67-1-F-1.....	33	B-5	1,445	11%; open
T67-1-F-3.....	33	B-5		46%; open
T67-1-F-4.....	33	B-5	1,102	20%; open
T88-A-1.....	44	B-26		5%; open
T88-A-2.....	44	B-26	430	5%; open
T88-B-2.....	4	B-12	620	60%; open
T88-H-1.....	28	B-5		5%; open
T88-H-2.....	28	B-5	3,174	None
T88-I-1.....	30	B-5	1,084	15%; open
Texon Oil & Land Co.				
Hendricks 1-A...	41	B-5	1,185	70%; open
Hendricks 2-A...	41	B-5	3,015	60%; open
Hendricks 1-B...	45	B-26		32%; pinched
Hendricks 2-B...	45	B-26	6,350	None
The California Co. (formerly Turman & Maxwell)				
Hendricks 1-A...	29	B-5		20%
Hendricks 2-A...	29	B-5		None
Hendricks 8-A...	29	B-5	3,705	10%; open
Hendricks 3-A...	29	B-5		18%
Hendricks 4-A...	29	B-5		None
Hendricks 6-A...	29	B-5		40%
Hendricks 7-A...	29	B-5	1,820	45%; open

(Note—Sub-totals refer to production of wells or properties affected by water and do not include those as yet untouched by encroachment.)

Pure Oil Official Dies At Home in Tulsa

TULSA, May 5.—Howard Norton Cole, vice president and general manager of the southwestern producing division of the Pure Oil Co., died at his home early in the morning of May 4. He was 54 years old. Death came after several months illness. He had been confined to his home since January.

Mr. Cole came into the oil business as a civil engineer employed by the Sun Co., having charge of construction work in the Humble field. That was in 1904. Later he went to Shreveport, then to Wichita Falls for the same company and his work was given high recognition in 1913 when the Sun Co. sent him to Tulsa to have charge of all operations of the Twin State Oil Co., a subsidiary operating in Oklahoma and Kansas. He became vice president and general manager of the southwestern producing division of the Ohio Cities Gas Co., now the Pure Co., in 1918.

He was born on a farm near Kinsman, Ohio, in 1874 and was graduated from the Kinsman high school. His further education was obtained at the New Lynn preparatory school and Allegheny college, Meadville, Pa. At the latter school he met Miss Bess Margaret Baker, of Meadville, and they were married in 1900.

Construction work for the Wabash and the Pennsylvania railroads followed Mr. Cole's graduation from Allegheny. The Mount Washington tunnel at Pittsburgh was one of his notable achievements.

Mr. Cole was prominent in civic affairs in Tulsa and in movements of general interest to the oil industry. Throughout the development of the Seminole district he was active in the various steps taken to curb production. He served on most of the operators' committees appointed to do the planning, such committee work finally resulting in the adoption of the present plan of shutting in new producing areas.

One of his little known hobbies was the encouragement of worthy young men to get an education. He assisted many in a financial way who otherwise might have been deprived of college training.

Mr. Cole is survived by his widow and by his father, Charles Cole and his brother, Harmon Cole, who still live on the farm near Kinsman.

Funeral services were held May 5 in the First Presbyterian Church of Tulsa, with many of the Mid-Continent's oil industry leaders serving as active and honorary pall bearers. Following the services the body was taken to Meadville, Pa., for burial. At that place the cortege was to be met by executives of the Pure Oil Co.

Cutting Costs in Steam Raising, Distillation and Filtering

By Paul Truesdell
N. P. N. STAFF WRITER

Article 2

ONE of the chief problems that has confronted engineers seeking to improve the efficiency of shell stills in lubricating oil refineries has been the difficulty of making the heat generated in the furnace do its full duty; in other words, the difficulty of applying the principle of heat exchange to a batch operation.

And, although continuous operation has been applied to the running of lubricating crudes in some cases, in many plants it seems necessary to the operators to keep on running down to lube stock by the time-honored batch process. This is particularly true in refineries operating on Pennsylvania crude.

H. A. Ross, consulting engineer of Warren, in charge of the combustion improvement program being carried out jointly by 14 Pennsylvania and West Virginia refiners, has designed and built a batch still unit which does take advantage of heat exchange. The still that is described here is in the Seneca Oil Works at Warren. There are several such units operating in other Pennsylvania plants.

Even though the still as operated at the Seneca plant is reducing refining costs considerably, Mr. Ross thinks it possesses further possibilities that have not as yet been tried out.

The outward appearance of the still and its equipment from the front and rear are shown in two accompanying photographs, and details of furnace construction and a flow sheet are shown in two line drawings.

The unit consists essentially of a 500-barrel still, a heat exchanger, an insulated "accumulator tank," a circulating pump, condensers and tailhouse.

The still is an old one reclaimed from service in another part of the plant. It is mounted on a high setting. Mr. Ross' idea was to increase the combustion space in the furnace and at the same time reduce the grate area. He had found out a good deal about the possibilities of increasing efficiency and saving fuel by reducing grate areas, from his work in the cooperative boilerhouse improvement program put on the last two years by a group of eastern refiners. This program and its results have been frequently referred to in this paper.

In line with his experiences. Mr. Ross says there is only 24 square feet of active grate area under this still, which is equal to about 50 per cent of that usually found in still furnaces.

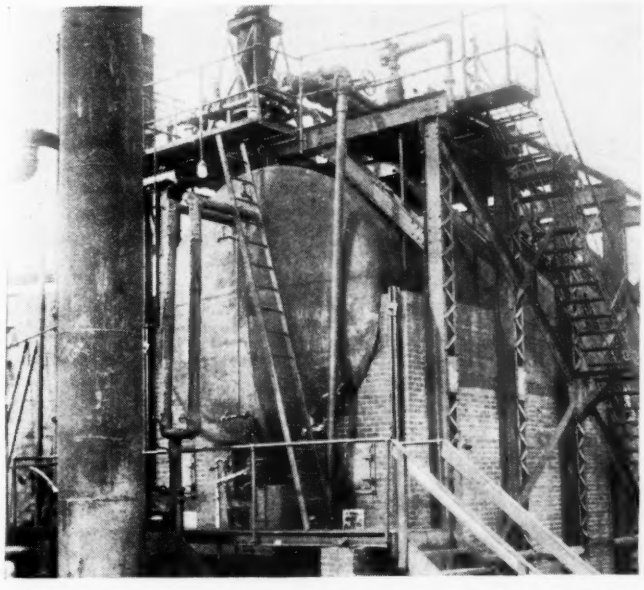
The setting does not support the still. Instead it is carried from overhead beams supported by structural steel columns. This frees the walls from the load which almost invariably causes them to buckle and develop air leaks after a certain period, because of the stresses set up by continual heating and cooling coupled still.

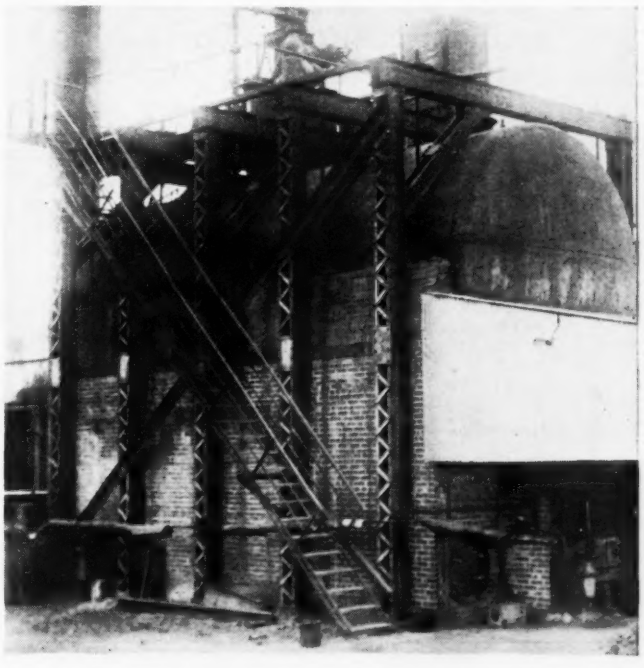
THE still is fired by the Cokal Pulverzone automatic stocker that was described last week* in connection with the new boiler plant at the Seneca refinery, and it consumes about 9 pounds of coal to the barrel of oil processed, according to Mr. Ross. A stoker-fired still is an unusual sight in a Pennsylvania refinery.

Slack coal is used as fuel and it is shovelled by hand into the hopper of the stoker from which it gravitates down to be shoved into the furnace by the eight pushers which are eccentrically driven by a pitman connected to a quarter horsepower motor. Five steam jets set in the fire door directly below the pushers, blow the finer coal out into the center of the furnace where it is burned in suspension in the flaming gases.

The products of combustion pass over the bridge wall to the rear of

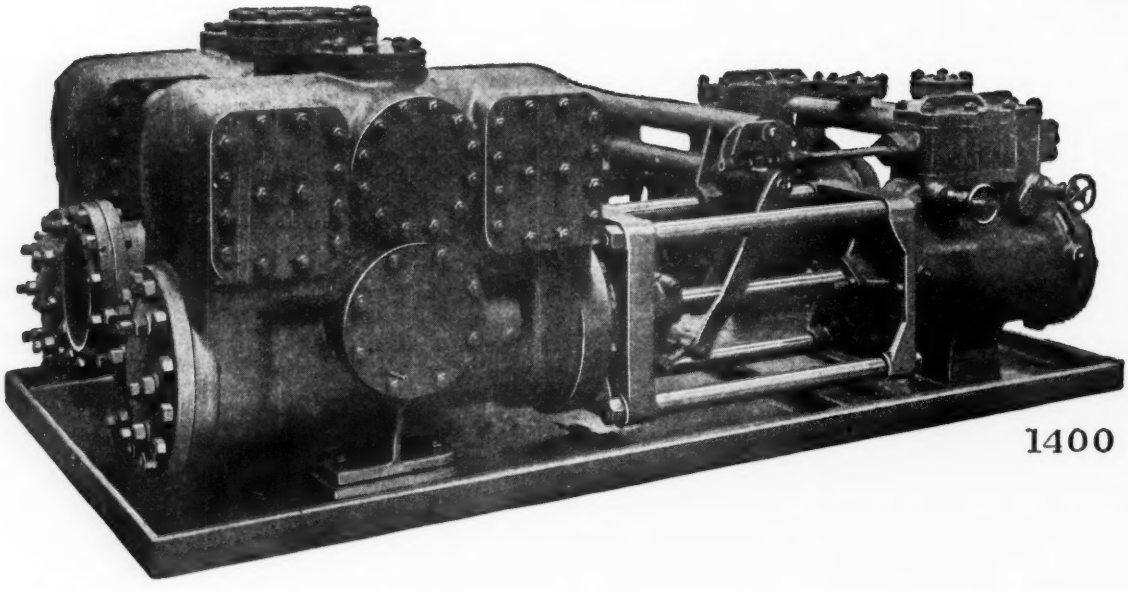
*N. P. N. May 2, 1928, page 17.





Above—rear view of the Ross still at the Seneca Oil Works plant. The vertical cylinder on top of the still is the heat exchanger in which the crude is heated to vaporizing temperature by the vapors. To the right—front view of the new style still at the Seneca Oil Works, designed by H. A. Ross. The stoker is seen at the front of the still setting under the canopy

TRANSIT
Pumping Out Pumps



1400

PUMPING out pumps are used to remove the tar and residual from various types of oil stills. This can be, and oftentimes is, one of the meanest jobs around a refinery. It requires a special pump to do this work successfully.

TRANSIT Block Valve Pumps have large rectangular valves as large as your feet, but no guards, no stems, no springs, nor separate seats to loosen by reason of the expansion of the fluid end from the hot tar. The valve seats are integral with the fluid cylinder casting. There is no trouble from expansion regardless of the heat of the fluid pumped.

Removing any valve chamber cover gives access to both intake and discharge valve, for inspection or removal.

These pumps are the solution of the pumping out problem, and they are low in price.

Descriptive matter on these pumps on request.

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Tulsa, Okla., or any store.

ASSOCIATED SUPPLY COMPANY
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Beaumont, Texas.

NATIONAL TRANSIT
Pump & Machine Co.
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DISTRICT OFFICES

NEW YORK
CLEVELAND
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F. C. RICHMOND MACHINERY CO.
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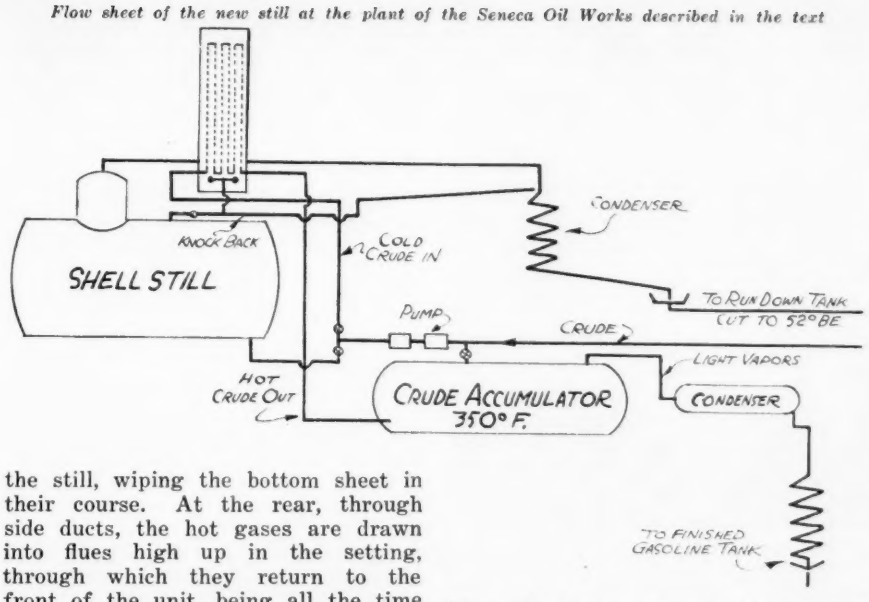
Baltimore, Md.

REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.

Flow sheet of the new still at the plant of the Seneca Oil Works described in the text



the still, wiping the bottom sheet in their course. At the rear, through side ducts, the hot gases are drawn into flues high up in the setting, through which they return to the front of the unit, being all the time in contact with the sides of the still, through which they transmit additional heat into the oil.

At the front of the still the gases drop down into smoke flues low in the side walls of the setting, through which they pass to the smoke stack at the rear. The gases enter the smoke stack with a maximum temperature of 650 degrees F. and show a carbon dioxide content ranging from 11 to 12½ per cent, according to Mr. Ross.

An air preheating device is included in the still design. The cold air is drawn in from the atmosphere through two openings in the back wall of the setting by natural draft and passes to the front of the still through tunnels in the setting just below the flues through which the hot gases pass from the back to the front in contact with the side sheets of the still.

At the front the air, warmed by its travel through the tunnel in contact with the hot flue wall, is discharged into the ashpit under the grates, thence making its way up through the fire into the combustion chamber, which it enters at about 175 to 200 degrees F., according to Mr. Ross.

The method of operating the still is as follows, as described by Mr. Ross. The still is filled with cold crude oil and the fire lighted. As the vapors are generated they pass into the shell of the vapor-to-liquid shell and tube heat exchanger which is mounted vertically on top of the still, as shown in the accompanying photograph, and thence to a condenser.

When the volume of vapors becomes sufficient the pump shown in the drawing representing the flow sheet, is started, pumping cold crude from storage through the tubes in the heat exchanger, and into the accumulator tank also shown in the drawing.

Pumping of crude through the heat exchanger into the accumulator tank is continued until the latter is full. Then the intake valve is shut off and the pump continues operating, circulating the crude in the accumulator tank repeatedly through the heat exchanger and back into the tank, throughout the length of the still run, the crude gathering heat at every circuit.

As will be seen in the drawing, the accumulator tank is fitted with a vapor line connected to a condenser which is continuously carrying off the gasoline vapors generated by the waste heat picked up in the heat exchanger. These vapors are condensed into finished high gravity gasoline.

The still is run down to a bottom of about 605 flash as at present operated, which takes about 14 hours. Separation is by gravity. The first cut is made at 52 A.P.I. gravity and is condensed and run into the storage tank as finished gasoline meeting the U. S. Motor endpoint of 437 and having an initial of about 114, considerably better than the U. S. Motor requirement.

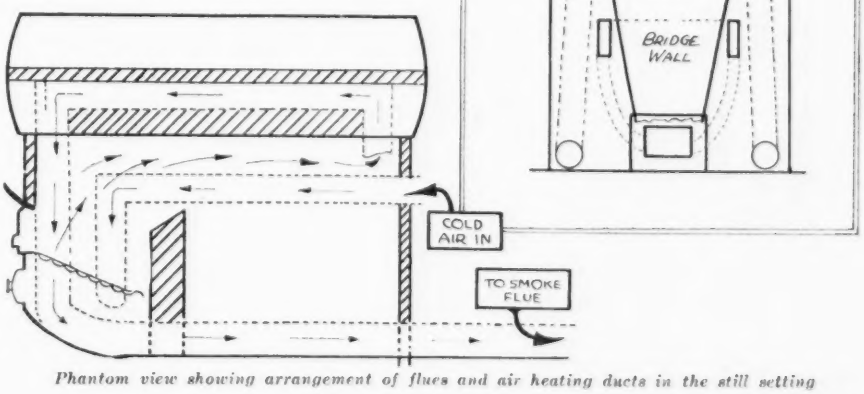
The next cut is made at 48 gravity A.P.I., this, of course, being a naphtha. Then the kerosene, gas oil and wax distillate streams respectively are taken off. The naphtha is run in with the cracked distillate made at the refinery and rerun, to produce overhead a gasoline which is mixed with the straight run gasoline previously mentioned. The very light gasoline taken off the crude in the accumulator tank is also mixed in, giving the motor fuel very good volatility and high gravity.

The bottoms from the rerunning operation is finished kerosene.

The cracked distillate is made in two Snodgrass cracking stills. These stills run about 600 barrels a week of gas oil, producing about 30 per cent of cracked distillate. It is found unnecessary to acid treat the cracked gasoline as it is handled at this plant.

The purpose of the heat exchange feature of this still is of course twofold, first, to distill as much as possible of the light ends from the crude by waste heat and, second, to take the load off the still by heating up the next charge of crude while the still is running. The object of both is to run more oil with less coal.

After the stock has been pumped out of the still at the end of a run, the accumulator tank is full of crude oil at a temperature of about 350 degrees F. This is pumped to the still at vaporizing temperature and the fuel that would have to be burned to bring cold crude from atmospheric temperature to its boiling point is thus saved.



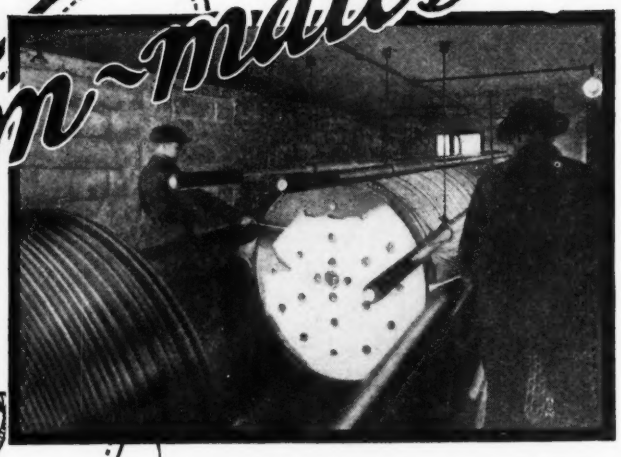
Phantom view showing arrangement of flues and air heating ducts in the still setting

With Cutting Costs

The third article in this series of four on Pennsylvania refining methods will discuss the latest in equipment and operating method for filtering cylinder stocks and neutral oils. Specifically, the new filterhouse recently completed at the Seneca Oil Works Co's. plant at Warren, Pa., and the manner in which it is operated will be described.

Article 1 which appeared in the May 2 issue of National Petroleum News, described the new boiler house recently installed at the Seneca plant.

Team-mates



IN AMERICA'S leading refineries, Carbondale Filter Presses and Filter Press Blankets go hand-in-hand in satisfying the strenuous demands of modern refinery methods in making lubricating oils.

This equipment is typical of Carbondale machinery, engineered by an experience of more than 37 years in the design and construction of refrigeration and other equipment for refiners.

A comprehensive description of Carbondale Refrigerating machinery is contained in our "Wax Plant Equipment Bulletin". Write for a copy.

Write for a copy of the Wax Plant Equipment Bulletin

THE CARBONDALE MACHINE CO.
Carbondale, Pa.
Branches in Principal Cities

Carbondale Refrigeration
CARMACO *for Refiners*

Gotkool
WATER CANS & COOLERS
Try a GOTT Water Can and you will always be a user. Keeps water pure and cool, easy to carry and always near. Made in 1½, 3, 5 and 10 gallon sizes.
GOTT Water Coolers, 3, 5, 8, 10 and 20 gallon. Order from your supply store.
H. P. GOTT MFG. CO.
Winfield, Kansas
KEEP PURE WATER ALWAYS HANDY

To make a perfect balance the accumulator tank should be the same size as the still so that the contents of the latter would exactly fill the still. However, the unit now in operation at the Seneca plant was made largely of materials at hand and the accumulator tank contains only 450 barrels so that it is not quite enough for a full charge of the 500-barrel still.

However, as the unit is operating now, it has these advantages over the ordinary batch shell still, according to Mr. Ross.

Takes 7 hours less time to run a batch down to a 605 flash bottom, thereby increasing the capacity of the still by 100 or 200 barrels a day.

Takes off 15 to 20 per cent of gasoline from the crude with waste heat.

Sends the crude into the still at vaporizing temperature instead of cold.

Eliminates rerunning of light products.

All these features, it is pointed out, mean a very great saving of fuel, coupled with the fact that the temperature at which the still is desired to run is fixed and the automatic stoker is set to feed coal into the fire at a rate to maintain that temperature closely.

The charts of the indicating thermometer with which the still is equipped show that the temperature is kept constant within very narrow limits.

Mr. Ross is authority for the statement that the entire installation cost less than $18,000.

While the new unit has not caused the shutdown of any of the other stills at the plant it is regarded as possible to put a much heavier load on it and thereby replace some of the other equipment. Mr. Ross thinks it possible to run the still as a semi-continuous operation, that is charge the still full at the start and pump in more crude during the run to replace that which is vaporized.

The heat exchange feature, preheating the crude, would seem to be a factor in favor of semi-continuous operation, although it is believed that it has never been tried.

It is realized that a bubble tower could be installed in connection with the still, which would make a sharp separation of the cuts in one operation. It has not seemed worth while to do this, however, under the peculiar conditions at the Seneca plant. The refinery is making some cracked distillate which must be rerun anyway and it is figured that the rerunning of the naphtha from the batch still along with the cracked product does not increase the cost of operation very much.

It is likely that Mr. Ross will do considerable further experimental work with this type of still at some of the other Pennsylvania plants and further interesting facts may be brought out in connection with this sort of operation on Pennsylvania crude.

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Truck Tanks

have a lower over-all height

This is a highly important feature. Farrell's type of "flexible" truck tank construction—assembled on a cushioned steel underframe—makes total height of installation several inches lower. The lower center of gravity—minimizes tendency of side sway — reduces all strains and stresses to the lowest degree.

The day is past for big cumbersome truck tanks — now high speed chassis for rapid delivery is the vogue. Farrell was the pioneer of the low center of gravity tanks—they fit every need of present day requirements.

Farrell builds truck tanks to any size, shape or capacity and offers prompt service filling your order.

— it will pay you to get Farrell's attractive low prices and details. Will be glad to send you a "picture - book" series of bulletins.

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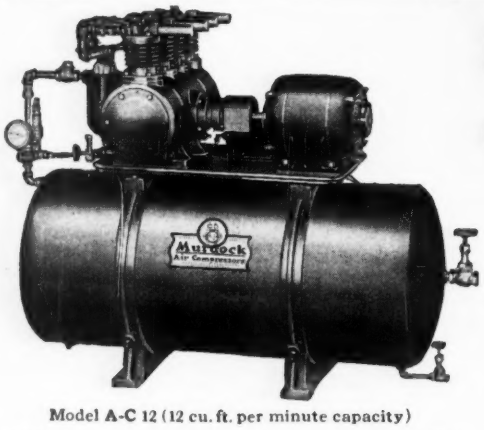
Are You Selling Service ~ and Not Just Gas and Oil?

Your free service is not charity, but is a drawing power that invites motorists to stop at your station for their gas and oil. But, your service must be constant and dependable.



Model A-C 12 (12 cu. ft. per minute capacity)

Distributors—We have an attractive, exclusive offer

Murdock Air Compressors

Give reliable air service, causing you no worry and never failing your customers. They are economical and efficient in operation.

The direct drive, eliminating power waste, is a noteworthy feature. In fact, the Murdock is soundly engineered and handsomely assembled to the minutest detail.

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"Built to a Reputation"

Pioneers in Standardized Steel Storage

STANDARD Tanks have set an enviable standard for steel storage the country over. The in-built quality is the result of over a score of years of careful workmanship.

We build in all capacities for all purposes from 65 gallons to 55,000 barrels.

THE STANDARD BOILER & PLATE IRON CO.

Niles—Ohio

J. W. HAIZLIP

Who, at the age of 22 years, alone manages the entire business of the Matthews & Haizlip Oil Leaksville, N. C. The company operates 29 service stations

Manages Jobbing Company At Twenty-Two

LEAKSVILLE, N. C., May 5.—At an age when most boys are strutting in raccoon coats on the college campus, J. W. Haizlip, of the Matthews & Haizlip Oil Co. here, is shouldering the responsibilities of a progressive oil jobbing company.

Although only 22, Mr. Haizlip has entire charge of the company, in which he is a partner. His uncle, Y. T. Matthews, the other partner, has been a merchant here for 25 years but he is not partial to his oil interests. He, therefore, appointed his nephew sole administrator of affairs and had him look after the 29 stations the company operates.

Mr. Haizlip has been in the oil business but two years, the first year of which was devoted to the managing of Self & Matthews Oil Co., which was commission agent for Sprinkle Oil Co., Reidsville, N. C.

Because of other business interests, Mr. Self gave up the oil business and his interest was bought by Mr. Haizlip, who in turn, together with his uncle, bought out the Sprinkle company's properties in Leaksville.

In November, 1927 Mr. Haizlip took charge of the Clark Oil Co.'s business here.

When the Self & Matthews company first started, in September, 1925, it had two stations. In June, 1926, when Mr. Haizlip entered the company, it had seven stations and a 10,000 gallon per month business. Now the company has 29 stations and sells about 35,000 gallons monthly. Two new stations will be built soon which are expected to increase the gallonage 10,000 gallons monthly.

Products of the Standard Oil Co. of New Jersey, and Pennsylvania motor oils are handled.

Final Quality Depends First, on the Crude

OVER 11,000 producing wells feed the pipe lines leading to Pure Oil's large, modern refineries. Some of this crude is rich in gasoline content; some is valuable for making high grade motor oil; while some is best suited as a base for industrial oils or greases. But, because Pure Oil controls this vast production, it has a sure supply from which its experts select the cream of the crudes for refining each product.

Every step in the producing, refining, and marketing of Pure Oil products is efficiently handled by Pure's own organization. That is why Pure Oil products are uniformly good . . . always delivered on the dot!

Mr. Petroleum Jobber: Here is an organization—8,000 strong—ready to supply your needs with quality products. Just phone, write, wire nearest Sales Office!

THE PURE OIL COMPANY

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One of the major producing, refining and marketing companies—yet strictly independent

REFINERIES:

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Muskogee, Okla.
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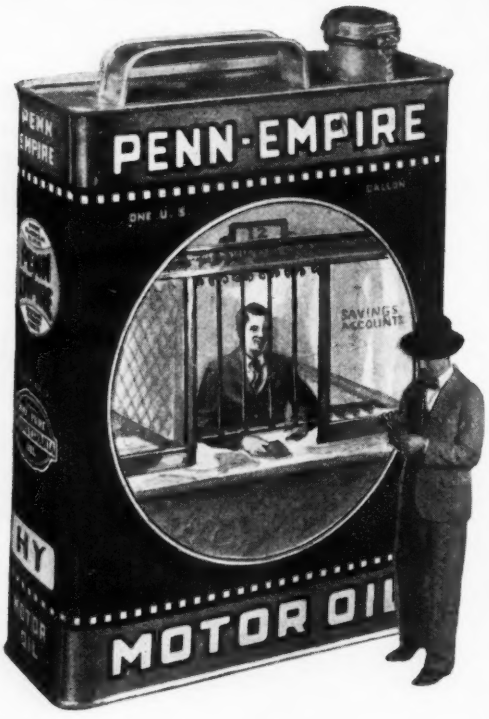
Philadelphia
Pittsburgh
Columbus, O.
Minneapolis
Tulsa, Okla.
Charleston, W. Va.
Atlanta, Ga.
Beaumont, Tex.
Pensacola, Fla.



PENN-EMPIRE *Profits*

as certain as your bank's dividends

Cheap lines, big promises, special deals, do not make for success in the oil business, as measured by the steady flow of profit, year in, year out.

Penn-Empire, with its standards of quality and stability, with its policy of not promising what it can't deliver, shows live jobbers the way to build a substantial trade in high grade Pennsylvania Oil under the established Penn-Empire brand name.*

Fine oils, uniformly high in specification, protected territories, ample margin of profits, backed by an old established refinery, known throughout the trade for reliability, integrity and fair dealing, cannot fail to produce results for any enterprising marketer.

If your present territory is not covered by Penn-Empire representation we have a worth-while proposition to offer you.

**Jobbers may also retail Penn-Empire Oils under their own brand name, if desired.*

Empire Oil Works, Inc., Oil City, Pa.

PENN-EMPIRE

OILS and GREASES

"When you buy Penn-Empire you get the best"

Continental Buys Sharon Marketer

OIL CITY, Pa., May 5.—The recent purchase by the Continental Refining Co. here of the properties of Hufi & White Co., Sharon, Pa. oil jobber and distributor, form a part of the expansion program the former company has under way.

Stations which were operated by Hufi & White in Trumbull, Mahoning and Mercer counties in Pennsylvania were included in the acquisition.

The Continental company, maker of Coreco gasoline and Coreco Pennsylect motor oils, with headquarters at Oil City, will remodel the original plan and the stations included in its recent purchase. Stations will be repainted in the Coreco color scheme of red and yellow.

Additional stations will be erected by the Continental company in the counties in which it now operates, according to A. F. Anderton, general manager.

This company is among those using the radio as a means of local advertising. It broadcasts through WLBW at Oil City and finds this type of consumer advertising beneficial from a local publicity standpoint, according to Mr. Anderton.

Jazz Tunes Help Sell Gasoline

ELYRIA, O., May 4.—Several sales of gasoline to truck fleet owners as a result of an oil company jazz orchestra, are reported by the Peerless Oil Co., oil jobber here, which has such an orchestra made up entirely of its own employes.

This orchestra played about town the past winter under the name of the Peerless company. It successfully competed with other local orchestras and a direct result of this advertising was the tracing of several sales to operators of fleets of commercial cars.

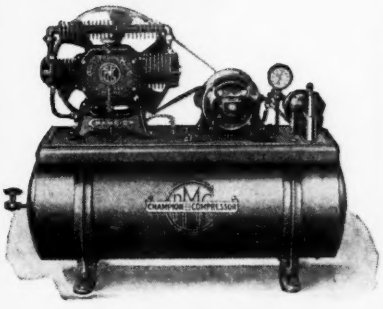
The employes who belong to the orchestra charge for their services and in this way increase their own incomes. J. R. Chappell, general manager, says that, while he knew of several other oil companies having orchestras operating under their own name, he had not heard of one made up entirely from its own organization.

The Peerless company operates nine service stations and one bulk plant.

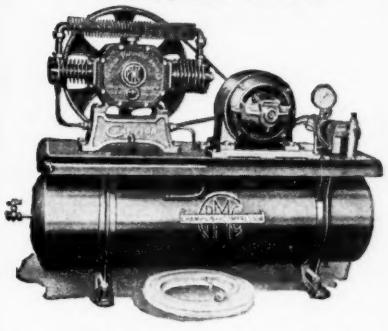
Missouri Jobbers Move

KANSAS CITY, May 5.—Offices of the Missouri Oil Men's Association have been moved from the Dwight Bldg., to 370 Board of Trade Bldg. according to George S. Allee, president.

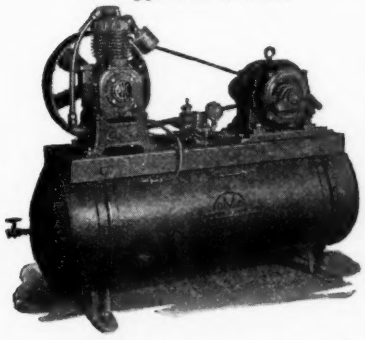
CHAMPION



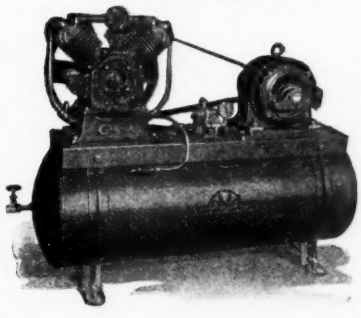
R-70, two stage, automatic, ball bearing compressor. 32 gal. tank, 200# working pressure. 1/2 H. P.



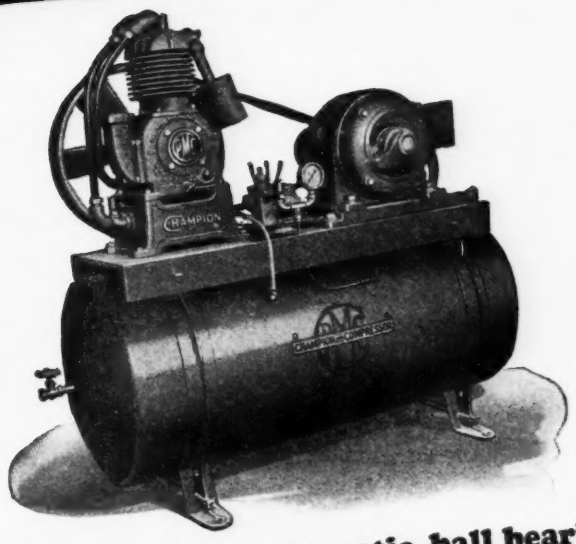
N-13, two stage, automatic, ball bearing compressor. 32 gal. tank, 200# working pressure. 3/4 H. P.



SE-27, single stage, automatic, ball bearing compressor. 80 gal. tank, 150# working pressure. 3 H. P.



SE-28, single stage, automatic, ball bearing compressor. 80 gal. tank, 150# working pressure. 5 H. P.



OE-41, two stage, automatic, ball bearing, 2 cylinder, vertical compressor. 60 gal. tank, 200 lbs. working pressure. 3 H. P.

In this type of compressor, vertical—2 cylinder, Champion again is the pioneer in offering a two stage, automatic equipment especially adapted for the larger service stations, repair shops, garages, etc., where high pressure, large volume air is required for the operation of, — in addition to tire inflation—high pressure greasing systems—air lifts—gasoline pumps—air tools, etc. May be used for paint spraying by the simple installation of a reducing valve in the paint air line. Equipment includes—ball bearing compressor with fan flywheel, clear vision oil gauge, filtering trap, check valve, safety valve, air gauge, automatic electric controller, automatic pressure unloader, belt, motor with adjustable sliding motor rail, to permit easy belt adjustment; all mounted on steel base, tank, needle valve and 25' air hose and chuck with fittings all complete ready to run when wired to electric current. Equipments with 2 or 3 phase motors have cut-out box with protective plugs. D.C. equipments have automatic starters — time limit acceleration.

Service Towers— four styles, efficient, sturdy, fool proof — will outlast the ordinary tower several times. Sold at a price that will interest you.

Champion also builds Car Washers and Paint Spray Units.

If you will analyze and compare the construction of Champion compressors with any other you will readily see their greater dollar value in the use of better material, careful workmanship, standardization and interchangeability of parts. Designed along lines of correct engineering practice.

No matter what your air need is don't buy a compressor until you have seen the Champion calalog — and secured their attractive low price.

Champion Pneumatic Machinery Co.

8168 So. Chicago Ave. Chicago, Illinois

NEW

REID Fulton Type Receiving Box

Write for Descriptive Bulletin No. 38

JOSEPH REID GAS ENGINE COMPANY
Oil City, Pennsylvania, U. S. A.

EXPORT SALES REPRESENTATIVE: Oil Field Equipment Co., Inc. 30 Church St., New York City.

STANDARDIZING TANK MANUFACTURE

One of the reasons Youngstown can build a better standard tank at a price no higher than that charged by less competent makers is the fact that volume plays an important part in teaching us how to do one thing well.

Great quantities of plates are cut to size, punched and stacked; thousand of heads are flanged and dished endlessly. This ceaseless fabrication of steel is a masterful teacher.

Write for your copy of Bulletin No. 15

THE YOUNGSTOWN BOILER & TANK CO.
YOUNGSTOWN, OHIO
Offices in Principal Cities

Youngstown TANKS "KEENE STANDARDIZED MADE"

R. W. McDOWELL
Assistant to vice president in charge of sales of Mid-Continent Petroleum Corp.

R. W. McDowell Promoted To Executive Sales Job

TULSA, May 4.—R. W. McDowell has been made assistant to D. W. Moffitt, vice president in charge of sales of the Mid-Continent Petroleum Corp. He began his new duties April 24. The position is a newly created one and will include supervision of both wholesale and retail sales activities of the company.

Mr. McDowell entered the oil business just after his discharge from the army when he became an employee of the Producers & Refiners Corp. In 1922 he was made assistant general sales manager of that company.

In January, 1926, Mr. McDowell left the Producers & Refiners to become president and general manager of the Black Hawk Oil Co. with headquarters at Waterloo, Ia. He remained with the Black Hawk until its properties were sold to the Mid-Continent Petroleum Corp. last October. Even then he continued to manage the properties, being made division manager for the Waterloo district which included the Iowa properties, one of the most important groups operated by the Mid-Continent.

Mr. McDowell's new offices will be on the fifth floor of the Cosden building. Tenants on this floor are being moved elsewhere in the building and the entire sales division will be concentrated there.

D. C. Wixson, another former Producers & Refiners Corp. man, who has been Mr. McDowell's assistant in Iowa, has been made division manager at Waterloo.

Armenian Attacks U. S.-Turk Pact

WASHINGTON, May 5.—Another oil "scandal" may make its appearance in this year's political campaign. After nearly four years of quiet the question of Turkish empire oil fields has been raised by Vahan Cardashian, an Armenian lawyer domiciled in New York.

For the time being Cardashian has enlisted the interest of Senator King of Utah. How long he will retain it is a question. He has made charges against the state department, the Standard Oil group, Charles E. Hughes and Andrew D. (sic) Mellon's Gulf Refining Co., calculated, in vulgar phrase, to make the hair curl. In summing up a 100-page "brief" Cardashian has told the Senate committee on foreign relations that:

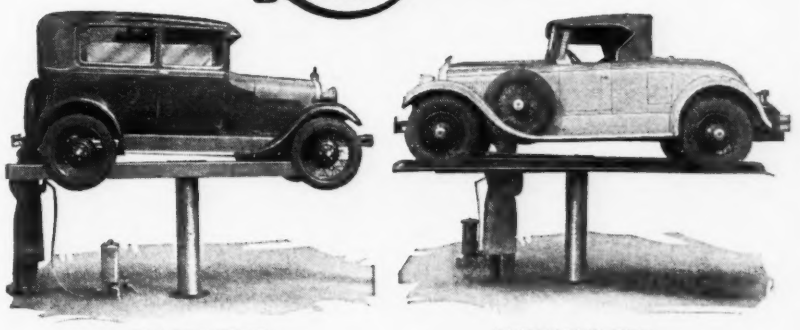
"It is charged that the Standard Oil Co., acting through Charles E. Hughes, has directed the Turkish policy of the department of state since 1921. In compliance with a policy thus conceived the department of state, at the Lausanne conference in 1923, bartered the Armenian case for a share of Mosul oil, for the benefit of the Standard Oil group and of Andrew D. Mellon's Gulf Refining Co.; and the department of state is now insisting that the senate ratify the Lausanne treaty in order that the Standard Oil group and the Gulf Refining Co. may seize oil deposits located in that part of Armenia whose boundaries were delimited by the arbitration of the President (Wilson) of the United States."

Cardashian asked for a hearing on his charges. Senator Borah, chairman of the foreign relations committee asked for what a lawyer would call a bill of particulars; that is he wanted to know whether bartered meant that some one had made a corrupt bargain and if so what was the consideration and who made it; also the names of the witnesses who would support the declaration. Another declaration was that the Turkish government was oppressing and mistreating American missionaries.

As to that Borah also wanted particulars such as the names of the maltreated missionaries and the names of the witnesses who would tell, not necessarily all, but at least some of the horrible details. Cardashian decided that it is not worth while to answer Borah so long as Senator King, who is not nominally of the same political faith as Borah, would give ear to his allegations.

Cardashian speaks for what he called the Armenian delegation, in opposition to the treaty of Lausanne.

Rotary Lift



CHASSIS TYPE DRIVE-ON TYPE

The Original Rotating Automobile Lift

Designed for all car servicing needs . . . built for lifetime service. Installed by all leading oil companies . . . endorsed by engineers and executives everywhere.

Rotary Lift is constructed according to approved principles of safety and design . . . built to give maximum service and efficiency at minimum cost. More than 3,000 installations is evidence of its superior service and performance. One of the two models shown above will meet your needs for service equipment. Ask for circular N-4 for full information.

Automobile Rotary Lift Co.
MEMPHIS, TENN.

JAMES B. BERRY SONS' COMPANY, INC.
General Office—Oil City, Pa.

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes.
For Domestic or Export.

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL

CYLINDER STOCKS
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Whether Refiners Make Money or Not Depends Upon the Refiners

By G. C. Davison*

Delivered at National Association Meeting, Cambridge Springs, Pa. April 20

JUDGING by the earning statements for 1927 which have been recently published, the refining industry is far from happy and prosperous. But before answering the question contained in the title of this paper, "is it helpless," it would be advisable to attempt to make a diagnosis of the case.

The refining branch of the industry seems to be suffering from the action of natural laws, aggravated by conditions now existing in its allied branches, production of crude, and marketing of refined products.

The first natural law that has played an important part in bringing about present conditions is the law of diminishing returns. This law is very old, and fundamental, and applies to practically all industries. It means that when an industry shows a very great margin of profit, capital and ambitious individuals are attracted to it. The supply is increased, and competition reduces profits. When profits are reduced to a certain point for the industry as a whole, there will be some plants operating at a loss, so that one by one, they shut down, and in a measure help relieve the situation.

This law has been working in a very striking manner in the petroleum refining business for the past seven or eight years. Returns on investments have been diminishing, as shown by earning statements. A rough measure of these diminishing returns is shown by the narrowing margin between tank car price of gasoline, and price of crude oil, as illustrated by Figure 1.

The operation of this law can be stopped by a monopoly, such as the manufacture of articles protected by patents, or by a rapidly increasing demand equal to or in excess of supply.

While the refining branch of the industry, like all industries, is subject to the workings of this law, it can adapt itself to it, and by an intelligent course of action always realize a fair profit even if the enormous margins of seven or eight years ago have disappeared forever.

The second natural law affecting the refining industry, is that of supply and demand.

You are all so familiar with present conditions in the production of crude oil I will not go into that, except to remark that crude production and refining are so closely related, that many seem to believe that when we have a flood of crude oil, that the market is inevitably flooded with low priced unprofitable gasoline. There is no question about such having been the fact during the past year. But as to whether it is inevitable, or necessary is another question.

Other industries furnish us with examples of how these two natural laws operate, and how an industry can, after having severely suffered, save itself. A fairly parallel case is that of the sugar industry. Sugar is a world commodity, like petroleum. Because of the world war, European beet sugar production was reduced to about one-fourth of normal. Sugar went to unheard of prices in 1920.

Millions of capital went into Cuba. The production of that island was more than doubled. In the meantime, Europe increased its acreage. So for several years we have had an overproduction of raw sugar. Cuba was forced to sell at 2 cents per pound when the cost of production was nearer 3 cents. To correct the situation the Cuban government took a hand, and deliberately cut the production. Last year with a supply of cane sufficient to produce 6,000,000 tons of raw sugar, the mills were permitted to grind only 4,500,000.

This year Cuba has ordered its mills to produce only 4,000,000 tons, though the acreage planted is capable of producing a much larger amount. It was either a case of rationalizing production or seeing the

*Tri-State Refining Co., Kenova, W. Va.

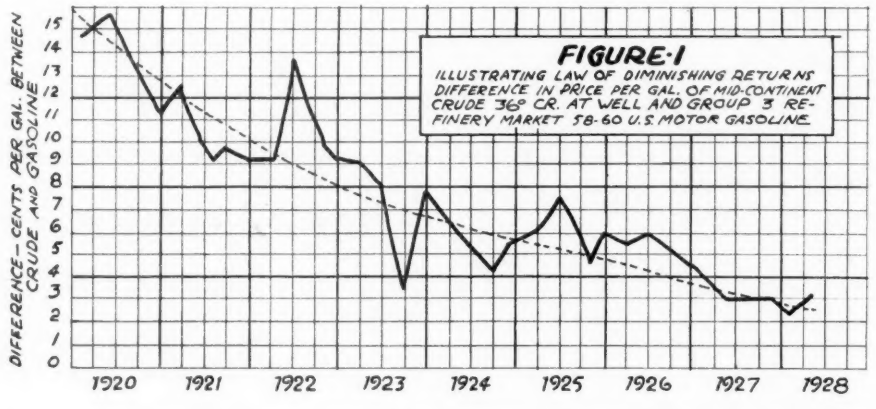


FIGURE 1
ILLUSTRATING LAW OF DIMINISHING RETURNS DIFFERENCE IN PRICE PER GAL. OF MID-CONTINENT CRUDE 36° CR. AT WELL AND GROUP 3 REFINERY MARKET 58-60 U.S. MOTOR GASOLINE

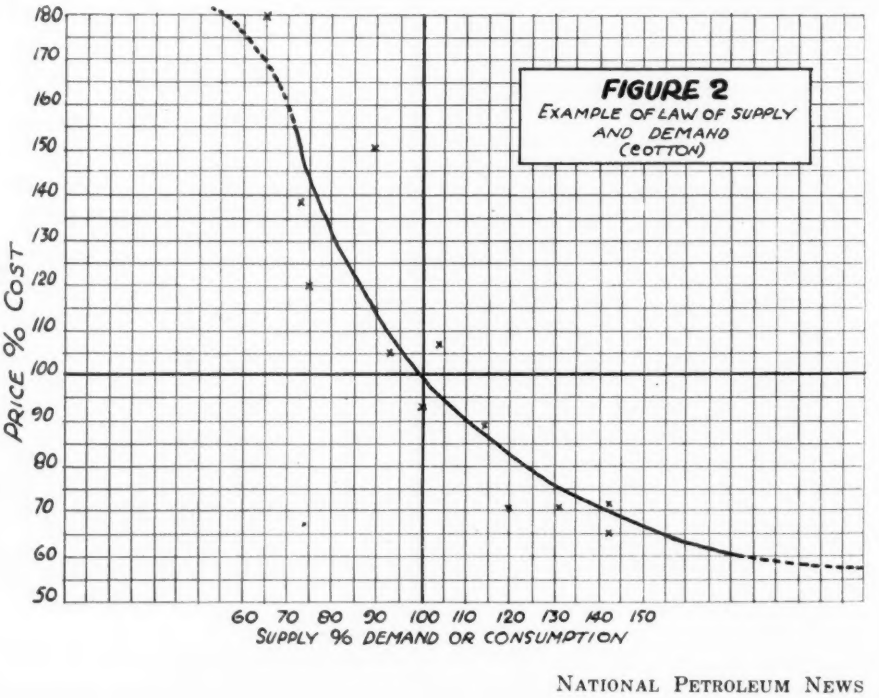


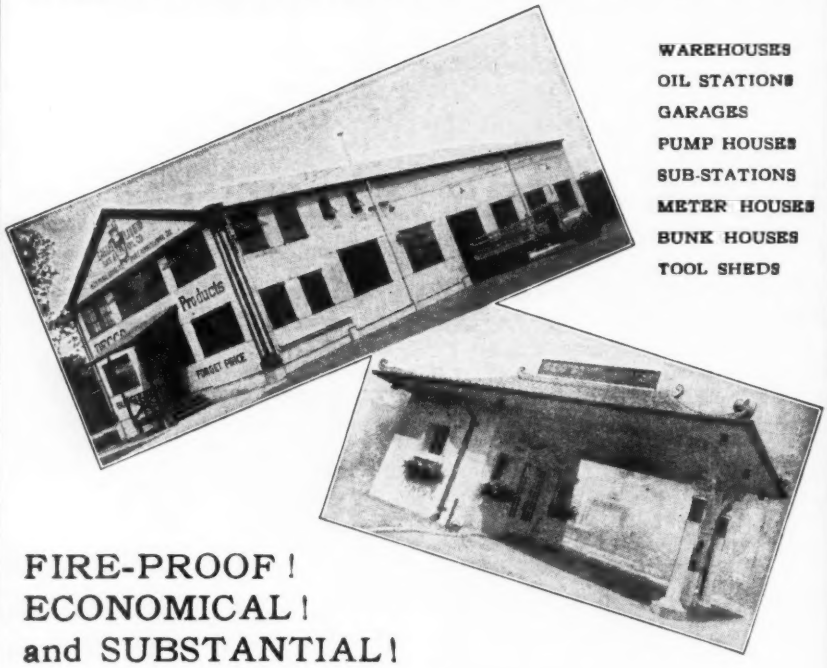
FIGURE 2
EXAMPLE OF LAW OF SUPPLY AND DEMAND (COTTON)

Conditions in the oil industry are showing definite signs of improvement Every refiner will wish to be prepared to make the greatest possible profit–and the biggest profits are only possible through operation of Dubbs Cracking Process with Flashing System

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

STEEL BUILDINGS for EVERY PURPOSE



WAREHOUSES
OIL STATIONS
GARAGES
PUMP HOUSES
SUB-STATIONS
METER HOUSES
BUNK HOUSES
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FIRE-PROOF!
ECONOMICAL!
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Send for our complete catalog of "STEEL BUILDINGS"

THE EDWARDS MANUFACTURING CO.

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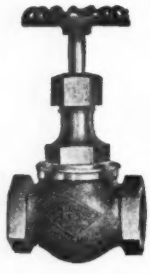


Fig. 106
Screwed, Jenkins Standard Bronze Globe Valve

Fig. 108
Screwed, Jenkins Standard Bronze Angle Valve

'64—and 64 more!

The year of '64 saw the Jenkins Valve put on the market. 64 more years have passed and the Jenkins Valve is more firmly established than ever in the favor of engineers in all industries in every part of the country.

In the year-by-year building up of confidence and strengthening of a national reputation, rigidly high standards have played an important part. Metal for Jenkins Valves is proved by analyses before and after casting; the design of Jenkins Valves provides strength in every detail. The finished valve before it leaves the Jenkins factory must pass a wide margin safety test—in service more severe than that for which it is recommended.

Jenkins Valves—for practically every requirement—at supply houses everywhere.

JENKINS BROS.

80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 No. Seventh Street.....Philadelphia, Pa.
646 Washington Boulevard.....Chicago, Ill.

JENKINS BROS., Limited
Montreal, Canada *London, England*

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

price drop even below 2 cents. Cuba has conducted negotiations with other countries with a view to cooperation, to rationalize production.

It is too early to forecast just how this movement will turn out. In any case it is interesting, and the petroleum industry should watch it in the event that it may some day have to take similar action. So much for the raw material, corresponding to our crude oil.

Concurrently with the overproduction and unprofitable prices, the sugar refineries of this country were in a demoralized state. Some of them, like some of the oil companies had their own production. They were fighting each other for business, making secret concessions, and breaking every law of good trade practice until they reached a point where something had to be done about it. Our own refining branch seems to be rapidly following in their footsteps.

To correct this deplorable condition, the sugar refiners a few months ago, organized the Sugar Institute. Certain bad practices were done away with. Thus far they have not artificially boosted the price of their refined product. But they have stabilized the market, have cut out unethical practices, and from all appearance conditions in the sugar refining industry have been greatly improved.

One other industry that furnishes a splendid example of the working of the law of supply and demand, is raw cotton. Here is a world commodity of which the United States produces the greater part of the world's supply. It has a real market, with exchanges in New York, New Orleans, Liverpool and other centers actively trading every working day in the year.

Looking back over a period of many years, considering size of crop and prices, one sees almost a perfect example of the free working of the law of supply and demand. Some years we grow a bumper crop exceeding by several million bales, expectations based on average yields. The inevitable result is a drop in price, often far below cost of production. Again, due to freakish weather conditions or depredations of the boll weevil or both, the crop falls short of average expectations, or normal requirements, and we see prices soar. This market has shown that cost of production has little or nothing to do with price. If the supply is greater than needed, price often goes far below cost of production, and conversely, if the supply is short, the price can go to double the cost.

Paradoxical as it may seem, the south is usually more prosperous and gets more for its cotton when it has a bad year and raises a small crop, than in the good years when it raises a big crop. The south so fully understands the situation, that it, through banks, state governments,

and associations, manages to roughly rationalize supply and demand by increasing or decreasing acreage from year to year as the market and world demand require.

When such an industry, made up of many thousands of little planters and big planters, subject to the vagaries of weather and insects, finds it possible to roughly adjust supply to demand, how much simpler is the problem of the petroleum refiner.

As a matter of interest, to show the working of the law of supply and demand as applied to the cotton market, I submit Figure 2. Out of curiosity I looked up the size of crop and prices, covering a long period of years, and reduced them to a common denominator, calling normal world's consumption 100 per cent—and therefore normal supply 100 per cent. For price, I used cost of production as 100 per cent, as costs vary from year to year with the price of the dollar. Then by expressing departure from these bases in percentage, it is possible to plot relations between costs, prices, supply, and demand over a long period of years.

Figure 2 shows that for cotton, price goes up rapidly with a shortage of supply. When the supply is 10 per cent normal the price averages about 15 per cent above normal.

When the supply is in excess of normal, price does not fall so rapidly. When supply is 10 per cent above normal, price is 10 per cent below normal.

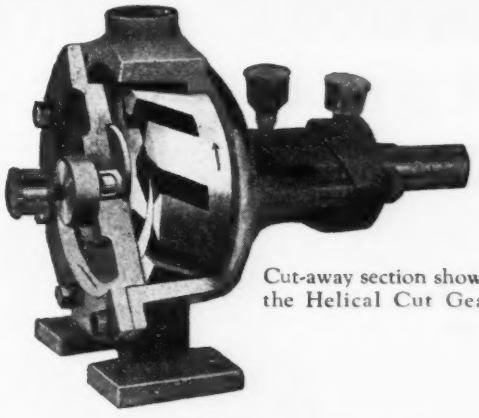
When supply is excessively above normal, price falls to about 65 per cent of normal or cost of production.

There is, of course, a point below which price will not apparently drop, regardless of amount of supply. For cotton this is apparently about two-thirds cost of production. The low point in price of sugar during the past seven years also happens to have been about two-thirds cost of production.

If we knew the cost of production of crude oil, we would probably find that on the average, present prices are somewhere about this proportion.

This chart tells the story of one big industry, and is probably applicable in a general way to others, including petroleum refining. If so, it should serve as a warning, as showing the possibilities of overproduction and consequent low prices. Thus if the cost of producing gasoline in the Mid-Continent area is now 6 cents, it would be possible to have the price go as low as 4 cents with unlimited overproduction.

The petroleum refining industry is relatively fortunate. It has a steadily growing demand for its products, and a market created for it at no cost to itself. It can have perfect control of its output without making any great sacrifices. While we hear much complaint about the present situation, it is very mild compared with what other industries have experienced. We have seen



Cut-away section showing the Helical Cut Gears.

A Pump That's Different

THE helical (spiral) cut gears of the Perfection Rotary Pump make it stand out from the ordinary type of pump because each time a cam of the internal gear passes by the intake and discharge ports the column of liquid is cut with a shearing action. This eliminates the shock and vibration that is found with a straight spur gear or vane or bucket, especially when the pump is running at high speed. The intermeshing cams in the internal gear and pinion (the only moving parts) do not go into mesh at once but roll together in a smooth and gradual manner. This makes it smooth running and results in decreased power consumption.

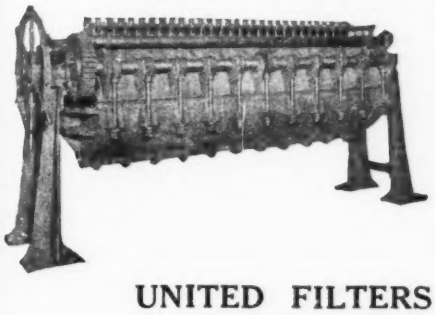
Write for new Bulletin No. 271 which illustrates several types of unloading pumps.

Perfection Manufacturing Co.
2194 East Hennepin Ave. Minneapolis, Minn.

PERFECTION ROTARY PUMPS

Sold by Oil Equipment Jobbers in most of the principal cities.

Contact Oil—Contact Gas



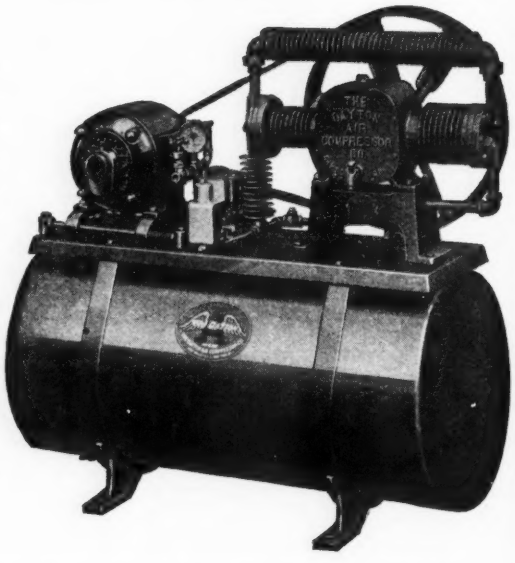
FROM a strictly competitive point of view, why not "contact" that oil or gas?
Many refineries are using this process and find their products better selling products.
Oils are clearer and brighter. Gasolines have better color.
For the filter, use the latest model Sweetlands. Easier to handle, clean, leak proof, efficient. Sweetlands are made by United Filters.

UNITED FILTERS CORPORATION
Hazleton, Pa.—Los Angeles Office, Central Building
Other Offices in Chicago—New York—Salt Lake City
Export Office—25 Broadway, N. Y.—Code Address, Unifilter, New York

THE "DAYTON G" PAYS PROFITS
—NOT IN GOODWILL BUT IN CASH

THIS up-to-date two stage air compressor still furnishes all the "free air" needed, but it has many other uses these days, and these new type uses for air are cash jobs.

The "G" works in harmony with the cash register, building up the receipts hour by hour. What size do you need?



THE "DAYTON G" IS BUILT IN 7 SIZES

The smallest one has a capacity of 2¼ cubic feet per minute, while the larger has 9¼ cubic feet capacity. The "G-8" shown above has 2 H.P. Motor, 60 gallon tank and a capacity of 9¼ cubic feet per minute This type will care for motor cleaning, grease rack operation, high pressure grease systems and gasoline dispensing systems. These services bring a direct cash return. Of course, tire inflating is done at the same time.

FEWER PARTS

In these "G" models we have eliminated all trouble-makers such as
Connecting Rods
Crosshead Pins
Cotter Pins and Bolts

Maximum efficiency and minimum repairs.

Write Engineering Dept.

If you have a doubt or question of any sort, regarding the type compressor best suited to your needs, write today and state your case to our Engineering Dept.

The LUCAS PUMP & TOOL COMPANY DAYTON, OHIO
DAYTON AIR COMPRESSORS

425 Valley St. **Dayton, Ohio**

Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a description of practically every process of making gasoline and most other motor fuels of promise or prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News. 1213 W. Third St., Cleveland, Ohio

what steps other industries have had to take to save themselves. So, profiting from their experience and example, it should not be difficult for the refining branch to regulate its output in accordance with the demand, and obtain for its products a price showing a fair profit.

In fact, even without an association embracing the entire refining industry, there are signs that heed has been taken and a more sensible policy is being pursued. But if attention were paid to refinery statistics, and a common sense policy tacitly adopted, with a sense of fair play, the refining branch of the industry would have little to worry about. At the same time the public would have no cause to complain, as a stabilization of profit within moderate bounds would be the best safeguard for the future that the public could have.

There is also a modern law of business that seems to be recognized more and more. That is the law of service. Today the refining branch has an unusual opportunity to give real service in a big way, and I believe would do so, if it could only get together and adopt a few general policies. This great opportunity for real service is along the lines of conservation. We have today above ground over 600,000,000 barrels of oil. Crude is being produced faster than required. Yet no one knows what our total reserve supplies under ground may be.

Where the refining industry could render a great public service in the present situation is:

1. Shut down cracking plants or run them part time, and skim crude sufficient to meet present demand for gasoline, thus preventing evaporation loss of crude in storage. It could store the resultant fuel oil as cracking stock without loss from evaporation.
2. As soon as crude in storage has been reduced, use more fuel and gas oil for cracking, leaving crude underground where it will not evaporate.
3. Instead of forcing fuel oil on the market, get all the gasoline possible out of it by cracking.
4. Those big companies in a position to do so, to acquire a reserve production of crude, by buying up proven territory, and not drilling it until the crude is needed.

Of course such a policy as this cannot be carried out under present conditions where there is no general association and no cooperation. But in view of what other industries have already accomplished, and with such a wonderful opportunity to so easily perform such a great national service, it is earnestly hoped that the leaders of this great industry will find some way to get all the 318 plants to cooperate along some such lines, and to do so with the full approval of the government and the public.

Methods Used in Wholesale and Retail Distribution of Gasoline and Oil

FIVE general classes of gasoline outlets were found by the investigators of gasoline and motor oil distribution and retailing for the S. F. Bowser Co., Fort Wayne, Ind. They are:

1. Drive-in stations.
2. Garages.
3. Curb and roadside pumps.
4. Direct to consumer, such as industrial fills.
5. Bulk filling stations.

The first class was subdivided into three classes: (a) stations owned and operated by oil companies; (b) stations owned by oil companies but operated by private individuals, and (c) stations owned and operated by private individuals.

The investigators, who were from the accounting firm of Peat, Marwick, Mitchell & Co., found many methods being used by refiners and jobbers to get retail outlets, also by the retail stations of both oil companies and individual owners to procure and hold customers.

Among the methods being used by wholesalers were:

1. Certified stations, a method being used by The Texas Co. to secure exclusive outlets for its goods and control of the quality of service offered by the stations. The stations are owned by individuals.

2. Leasing of a company's own stations to individual operators, who contract to handle only the goods of the company that owns the station, such as the method used by the Hickok Producing Co., Toledo, O.

3. Authorized Agents Agreement, such as is used by the Standard Oil Co. of Indiana. Under this agreement the dealer binds himself to handle the particular oil company's oils and gasoline but is allowed to handle automobile supplies, and goods other than petroleum products.

4. Leasing and loaning of equipment, a method that has been used by many large and small companies and which has been abused more than any other method and has led to a great deal of expensive and profitless subsidizing.

5. Straight contracts to supply gasoline at a fixed margin under the service station price.

Methods used to stimulate retail trade include:

1. Greasing palaces for the complete lubrication of cars, battery, tire, repair and washing service—the super station.
2. Advertising.
3. Personal solicitation.
4. Coupon books, which give the purchaser a discount of two to 10 per cent on all goods bought.
5. Premiums.
6. Sale of stock in a station to customers.
7. Bargain days when gasoline or oil are sold at a substantial reduction from the regular price.
8. Cut prices, a common method among bulk filling station operators.

The survey report makes these general observations:

"Just as in any comparatively new

N. P. N. Articles Cited

DISTRIBUTION and merchandising methods cited in the Bowser survey were taken from articles in trade publications of the last two years. Of 14 examples mentioned 10 were from NATIONAL PETROLEUM NEWS. The other four were distributed among other petroleum papers.

Other articles discussing the Bowser survey of distribution of petroleum products appeared in the April 25th and April 18th issues of NATIONAL PETROLEUM NEWS.

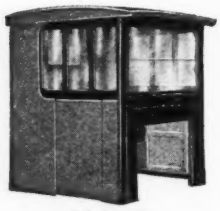
Factors by Which Gasoline and Oil Outlets Are Gauged

HERE are the factors that govern the distribution and merchandising of gasoline, motor oils and equipment, as determined for S. F. Bowser & Co., Fort Wayne, Ind.

A marketing company, or individual, may gauge its market by using this outline. Most of the information can be obtained locally by each marketer. The outline follows:

1. **Automobiles—passenger cars, buses, trucks and motorcycles—consume the major portion of the gasoline produced.**
2. **Consumption varies with:**
   - (a) Number of automobiles.
   - (b) Annual mileage per automobile.
   - (c) Consumption per mile of average automobile.
   - (d) General business conditions.
3. **Number of automobiles depends upon:**
   - (a) Price (cost of manufacture, material and labor, etc.).
   - (b) Prosperity of the population (terms on which automobiles can be bought).
   - (c) Number of good roads.
   - (d) Construction of good roads.
   - (e) Lack of competition by railroads, etc.
   - (f) Depends inversely on congestion of population.
   - (g) Standards of living.
4. **Mileage depends upon:**
   - (a) Good roads—which can be used throughout year.
   - (b) Climate and weather.
   - (c) Power of equipment to combat adverse weather conditions and to remain continuously in service.
   - (d) Lack of other convenient methods of transportation.
   - (e) Prosperity of the population.
   - (f) Cost of operation and maintenance of automobile.
5. **Consumption per mile depends upon:**
   - (a) Size and weight of automobile.
   - (b) Efficiency of engine.
   - (c) Character of fuel.
   - (d) Contour of country and amount of driving in traffic.
   - (e) Condition of roads.
6. **Number of filling stations (and pumps) depends upon:**
   - (a) Consumption.
   - (b) Distribution of traffic.
   - (c) Development of country roads and secondary highways into main highways which is dependent upon:
     - (1) Improvement of secondary roads
     - (2) Overcrowding of main highways.
     - (3) Education of automobilists as to use of secondary roads by new maps, blue books, road signs and advertising.
   - (d) Competition among oil companies for outlets.
   - (e) Demand of motorists for service (involving consideration of peak periods, convenient location, frequency of stations selling favorite gas).
   - (f) Cost of stations and equipment.
   - (g) Opportunity for profitable station operation (see 7).
   - (h) Distance cars can travel without a refill.
   - (i) Accuracy and previous prevalence of gasoline gauges.
7. **The earnings of a filling station depend upon:**
   - (a) The strategic location of the station involving:
     - (1) Amount and continuity of traffic passing.
     - (2) Willingness of a large proportion of this traffic to stop.
     - (3) Presence of local trade furnishing repeat business.
     - (4) Location as to sources of supply.
     - (5) Opportunity to combine with other businesses.
     - (6) Competitors in the field.
   - (b) Amount invested in station.
   - (c) Length of season.
   - (d) Management of station, which depends upon the effectiveness of:
     - (1) Purchasing, depending upon:
       - (a) Shrewdness—ability to bargain.
       - (b) Competition of oil and other companies.
       - (c) Judgment as to time to buy or contract.
       - (d) Maintenance of stock of wanted and profitable goods.
     - (2) Station operation, depending upon:
       - (a) Supervision of help.
       - (b) Conservation of material and supplies.
       - (c) Plant maintenance.
       - (d) Control and check methods.
     - (3) Selling, depending upon:
       - (a) Sales methods.
       - (b) Service.
       - (c) Advertising.
       - (d) Personal solicitation and follow-up.
       - (e) Concentration upon sale of profitable lines, such as lubricating oils, etc.

Model FD-50


Model D

Model CO-54

HIGHLAND *Cabs*

with ROCKER SILL MOUNTING

Embody Every Element For More Efficient Service

WITH a Highland Cab your men can drive with everything open—windshield, side and back windows—lots of air and ventilation.

Yet, with only a few movements, they can also enjoy a cab that's wind-proof, rain-proof, and weather-proof—an all season, all weather cab.

Because of the special construction at the front corners—corner glasses at a 45 degree angle in models FD and CO, and a thin but strong steel support in Model D—your men can see in all directions. Blind spots have been reduced to a minimum.

The Rocker Sill Mounting, a special Highland feature, relieves the cab of twists and strains. The cab rides always on an even keel with the radiator no matter how rough the going. This means less wear and tear on the cab and greater comfort to the drivers.

Highland Cabs cost no more than ordinary cabs, but they're worth more. Let us tell you the complete story.

There's a distributor near you. Write for his name and address, telling us the kind and size of truck you're thinking of buying.

THE HIGHLAND BODY MFG. CO.
430 Elmwood Place, Cincinnati, Ohio

CLASSIFIED ADVERTISING will get results for you no matter what you "want"

Turn to that page, with rates, at back of this issue.

industry which has grown to great size and has become highly competitive in a comparatively short time, there exists in the retail petroleum business a great divergence of opinion as to what constitutes sound merchandising. Furthermore, many principles and methods which have proved sound in other businesses of a similar fundamental nature are either unknown or are argued with heat and suspicion. The industry as a whole is in great need of education.

"Unfortunately, the concern which has made money for a time in spite of unbusinesslike practices is seldom open to reason. The difference in degree of enlightenment between the best brains of the industry, which are by no means all found in the larger companies, and those who have made money because of fortunate location or the ignorance of the public, is very great; so that education is likely to occur through the law of survival of the fittest. Meantime it is likely that enormous waste will continue while the capital of the unfit is being exhausted.

"The education of an industry is a stupendous task. The fit can only hope to educate the unfit by example, as the latter are not inclined to be influenced materially by precept, and by the adoption of sound business methods, prosper as greatly as circumstances permit until the unenlightened adopt better methods or become eliminated. Before this occurs it is probable that the casualty list will be quite heavy, like it was in the automotive industry.

"The merchandising methods are exceedingly good in certain companies. For instance, to cite only a few:

"1. Systematic methods of overcoming off peak periods are being adopted, such as:

"(a) Intensive canvass of the neighborhood to secure greasing, washing and repair business.

"(b) Intensive canvasses of the locality by station attendants at off peak hours to solicit the business in the neighborhood.

"(c) Maintenance of effective systems for following up prospects in the neighborhoood.

"(d) Providing heated space in winter where filling, oiling, tire repairing, etc., can be done in comfort.

"(e) Combining the sale of gasoline and oil with other businesses. This is common but is not always intelligently done.

"2. Systematic methods of training station employes are introduced, together with intelligent sales manuals. Sales methods in some large companies and among a great many Independents are admirable but a great deal of the salesmanship encountered is deplorable.

"3. The systematic marking of stations being approached has been intelligently done in very few cases. There has been far too little of this marking, with the result that the mo-

torist is more likely to whiz by one or two expensive and carefully located stations before he stops. There is a great opportunity in this field.

"4. Station illumination has been excellently done in some instances.

"5. Rigid and frequent inspection of branded goods has been instituted in many cases to insure the public against substitution.

"6. Some very intelligent national advertising of brands has been done with excellent results, but a surprisingly small number of the larger companies have realized the strategic importance to be gained by impressing on the public the fact they are maintaining quality.

"7. A very few companies have made a systematic analysis of the markets, but the industry as a whole has neglected careful staff work, with careful determination of policy upon a basis of facts, for line fighting, which has frequently been more vigorous than intelligent. There is great need for the type of careful market surveys which for some years have constituted established procedure in the older and more stabilized industries."

The survey found that the oil industry was fifteenth among national advertisers in expenditure for advertising space in 1926. The principal national advertisers that year were in order of amounts spent: The Texas Co., The Vacuum Oil Co., the Tide Water Oil Co., the Indian Refining Co., the Independent Oil Men of America, and the Pennzoil Co. Total expenditures in national magazines by the oil industry amounted to $2,419,-011.

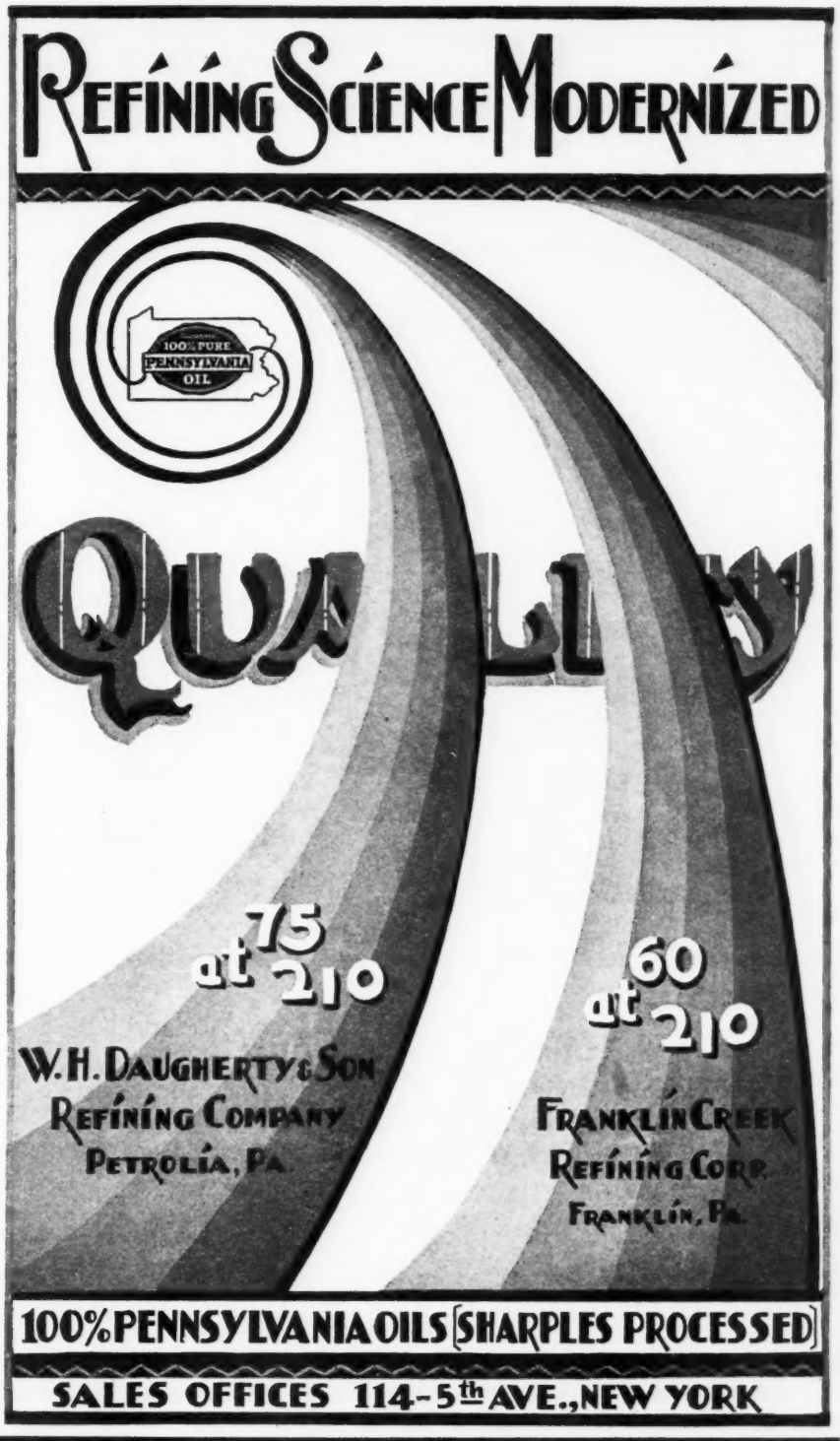
In newspaper advertising the oil industry was fifth with expenditures totaling $4,335,000. Leading newspaper advertisers in order named were: Standard Oil Co. of Indiana, Standard Oil Co. of New York, Standard Oil Co. of New Jersey, the Vacuum Oil Co., Union Oil Co. of California, Tide Water Oil Co., Atlantic Refining Co., Gulf Refining Co., and General Petroleum Corp. The Standard Oil Co. of Indiana spent $2,000,000 and the second company $600,000. Cities Service Co. spent $400,000 in newspaper advertising, part of which was for oil and gasoline.

Combining the two classifications, gasoline and oil advertising ranked tenth with a total expenditure of $6,754,000.

Advertising expenditures of the oil industry were exceeded by the following industries in the order named: automobile, foods and beverages, drugs and toilet goods, furniture and furnishings, tobacco, clothing and dry goods, building materials, soaps and housekeepers' supplies, and musical instruments and radio.

The automobile industry spent $43,-454,000 or approximately six times as much as the oil industry.

These compilations did not contain


REFINING SCIENCE MODERNIZED
100% PURE PENNSYLVANIA OIL
75 at 210
W. H. DAUGHERTY & SON REFINING COMPANY PETROLIA, PA.
60 at 210
FRANKLIN CREEK REFINING CORP. FRANKLIN, PA.
100% PENNSYLVANIA OILS SHARPLES PROCESSED
SALES OFFICES 114-5th AVE., NEW YORK

Help Your Salesmen

to acquire a working technical knowledge of the selection, application and use of lubricants, by ordering for each one a copy of the PRACTICE OF LUBRICATION by T. C. Thomsen.

It discusses the origin, nature and testing of lubricants and every phase of lubrication engineering.

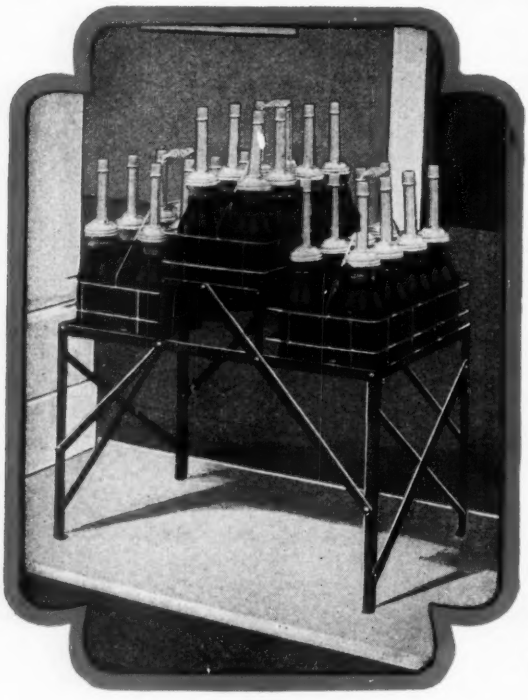
It is $6 a copy. Make your check payable to—

National Petroleum News
1213 West Third Street · Cleveland, Ohio

"ON YOUR MARKS!"

"ON YOUR Marks,—get set,"—at the crack of a pistol the runners are off. The best trained and prepared is the first to break the tape—a winner.

In the race for business, the station that is on its toes, ready to serve quickly, with modern, time-saving equipment, is the one that will win.



Rhodes Prefilled Oil Dispensers are time savers. Prefilled during spare moments, and displayed beside your gas pumps, the transparent containers show the oil in its true color. The motorist sees what he gets, and he gets all he sees.

"Get set" for the motorist by being "on your toes," ready to serve quickly with an ample supply of oil,—your most profitable merchandise,—at arms reach. Equip your station with Rhodes Dispensers today.

JAY B. RHODES Co
KALAMAZOO, MICHIGAN.

"Burning Liquid Fuel"

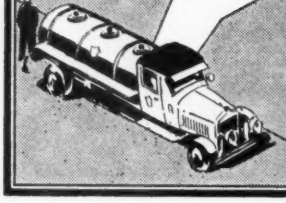
LEARN real facts which have never been published before on the subject of burning liquid fuel, by W. N. Best, the recognized authority.

Send your order and check for $4 to—

National Petroleum News
1213 W. 3rd Street Cleveland, Ohio

"DRAINS LIKE A FUNNEL"

WELDCO
TRADE MARK REG. U.S. PAT. OFF.
TRUCK TANKS



Has exclusive Funnel Drain feature, and *drains to the last drop at any angle.* Custom-built to meet your exact requirements Illustrated literature and prices gladly sent.

The Youngstown Welding Co.
Welders Since 1912
Youngstown, Ohio

the advertising in business papers, and the examples of many refiners in the advertising in NATIONAL PETROLEUM NEWS are cited to show what is being done to secure jobbers and dealers.

With the exception that there was less price cutting and the lease equipment situation was better, the merchandising of motor oils was being done the same as gasoline, the survey found.

'Front Seat Drivers Club' Boosts Gear Lube

CHICAGO, May 5.—Viscosity Oil Co., Chicago, has developed an unique novelty advertising stunt to boost its "Graigrene" transmission and differential lubricant. It is a combination windshield sticker and fraternity emblem.

The sticker is three leafed and about 2 inches wide and high. On the side toward the driver when it is sticking on the windshield, is printed, "Check Graigrene level at ..... miles" and "Change Graigrene, the efficient fluid lubricant for transmission and differential, Date ....."

The gummed side has a picture of a gagged woman and the mysterious inscription "F.S.D., a desperate brotherhood." The fraternity emblem shines forth to the outside world through the motorists' windshields. The F.S.D. stands for Front Seat Drivers.

New Stations Building

Pierre, S. D.—N. H. Sheppard, filling station.

Pierre, S. D.—D. F. Turner, filling station and garage.

De Smet, S. D.—G. G. Johns, filling station.

Owatonna, Minn.—Harold Morrison and Gerald Herron, filling station

Fairmount, Minn.—Mrs. J. E. Croissant, garage and filling station.

Madison, S. D.—Madison Oil Co., filling station.

Madison, S. D.—White Eagle Oil & Refining Co., filling station.

Edinburg, N. D.—Mutual Oil Co., filling station.

Corry, Pa.—Mead & Brown, filling station.

Hempstead, N. Y.—Walton H. Merry, filling station.

Allison, Ia.—Charles R. Thompson, filling station.

Shelbina, Mo.—T. C. Sumpter, filling station.

Sandusky, O.—Logan H. Korp, filling station.

Sandusky, O.—Monroeville Oil Co., filling station.

Berea, O.—Refiners Oil Co., Dayton, O., filling station.

Wapakoneta, O.—Landes Motor Inn, Inc., filling station.

Mt. Carroll, Ill.—Earl Neuschwanger, filling station.

S. Charleston, O.—Massie Bros., filling station.

Newcomerstown, O.—Elmer W. Neighbor, filling station.

Clarksburg, O.—J. S. Mossbarger, filling station and garage.

Geneva, Neb.—Will Ginn, filling station.

Inwood, Ia.—M. H. Bahnson Oil & Gas Co., filling station.

Louisville, Ky.—Stoll Oil Refining Co., filling station at Glasgow, Ky.

Save Money

Blend with SUN No. 96

and Any Good 150 to 200 Viscosity Oil

Your stock is reduced to two brands;

You buy at tank car prices;

You need only two storage tanks and a mixing tank;

Your capital investment is smaller and more quickly turned over;

And the quality of resultant oils of any desired viscosity will be much higher than the quality of the oils you now sell.

SPECIFICATIONS OF No. 96

HIGH FLASH HIGH FIRE LOW COLD TEST
LOWEST CARBON CONTENT GOOD DEMULSIBILITY
VISCOSITY 80-90 AT 210°F. PALE COLOR PRICED RIGHT

Write for Booklet, Mixing Charts and full particulars

SUN OIL COMPANY · PHILADELPHIA
Branches in Principal Cities

No. 96 GOLDEN

VISCOSITY 80-90 at 210° F.

Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

La Rue Smith, of Great Falls, Mont., has been elected a vice president of the Texas Pacific Coal & Oil Co., which maintains official headquarters at Thurber, Texas and executive offices at Fort Worth. Edgar J. Marston was re-elected president at the annual meeting. Vice-presidents re-elected were Dr. E. R. Lederer of Fort Worth and O. E. Mitchell of Thurber. R. N. Siebel, formerly treasurer, became secretary-treasurer when Herman Knox retired as secretary.

* * *

T. B. Brown, of the Penn-Mex Fuel Co. organization at Tampico, has been spending a few weeks in Texas-Oklahoma territory inspecting natural gasoline plant construction. The Penn-Mex is considering installing a natural gas gasoline plant on its Alamo property in the Southern district of Mexico.

* * *

L. H. Elder, secretary-treasurer of the East Coast Oil Co., S. A., subsidiary of the Southern Pacific Railroad Co., is back at San Francisco after a business trip to Tampico.

* * *

C. J. Crawford, formerly refinery superintendent at Tampico for the Mexican Eagle Oil Co., Ltd., (El Aguila), is in charge of plant construction for the Royal Dutch-Shell interests at Gruba, Danish West Indies.

* * *

Charles S. Atwell, formerly superintendent of the Norfolk terminal of The Texas Co., has been promoted and transferred to the export department. He immediately sailed from San Francisco for Sydney, Australia. Mr. Atwell has been with The Texas Co. since 1914, when he became an engineer at the Port Arthur works. He afterward served in engineering capacities in Mexico and Cuba.

* * *

Louis Lyons is chairman of the Bossier City plant Safety committee of the Louisiana Oil Refining Corp., Shreveport. His studies have shown, he says, that "before there is an accident (an effect) there must be first a cause. By the study of conditions we are able to make changes and possibly prevent future accidents." He finds accidents resulting from the "human element" most frequent. Therefore, a campaign of education backed by R. B. Pierce, refining department manager, is being conducted.

GEORGE R. MARLAND
A director of the Marland Oil Co. of Delaware

When George R. Marland left the University of Oklahoma, about 10 years ago, he started up the industrial ladder from the bottom. He worked at pipeline construction and took his turn at field development. There are few tasks that fall to the lot of the seasoned oil man which remain unfamiliar to Mr. Marland. Thus he carried forward to a responsible place in the companies headed by his foster father, Ernest W. Marland of Ponca City. George Marland is a director of the parent Marland Oil Co. of Delaware and active in the administration of affairs of the various operating subsidiaries. He is now about 32 years old and unmarried.

* * *

Harold K. Boysen, of the land department of Phillips Petroleum Co., has been transferred from west Texas headquarters at San Angelo to the Russell, Kansas, district.

* * *

W. L. Connelly, who for years headed the Sinclair Mexican Companies and afterwards was in charge of Mammoth Oil Co. operations in Wyoming, will soon leave Casper for South America.

* * *

Donald C. Barton, consulting geologist and geophysicist of Houston, recently conducted a two weeks series of lectures at the University of Chicago.

* * *

Employes of the Magnolia Petroleum Co. are organizing a baseball team at the Midland, Texas, tank farm. W. G. Terry, who has been in charge of the organization work, arranged with E. E. English to manage the team.

* * *

Chester W. Washburne, consulting geologist of New York, is now "commuting" to and from South America. After returning from Venezuela in March he sailed again for Sao Paulo, Brazil.

* * *

S. F. Shaw of San Antonio, who had charge of the Carter Oil Co.'s gas lift operations in the Seminole, Okla. district, is now in Tulsa after a South American trip. He visited Colombia and Peru in an engineering capacity.

* * *

W. L. Standard, manager of lubricant sales for the Union Oil Co. of California, announces the following territorial transfers of sales engineers: E. W. Hutton from Portland to Los Angeles; S. W. Dubbins from Seattle to Sacramento; D. A. Cain from Los Angeles to San Diego; M. C. French from Sacramento to the Los Angeles home office.

* * *

Dan J. Moran, productive vice president of The Texas Co., is extending his airplane activities. He has now more than 10 hours "at the stick" to his credit. About five hours of this "flying time" was added on a recent inspection trip over west Texas territory.

* * *

Pres. E. H. Blum of the Atlantic Oil Producing Co., Dallas, recently conducted heads of the parent Atlantic Refining Co., on a west Texas field inspection trip. J. W. Van Dyke, chairman of the board of directors, and W. M. Irish, president, were in the party.

* * *

James O'Neill, assistant refinery superintendent and Wm. McCullum, assistant superintendent of the process department, are in charge of lessons in handling fire equipment inaugurated at the Bossier City plant of the Louisiana Oil Refining Corp., across the Red river from Shreveport.

* * *

T. P. Glass of the Mexican Gulf Oil Co's. field organization in the Chapacao division of the general Panuco district is spending a month's vacation at San Antonio.

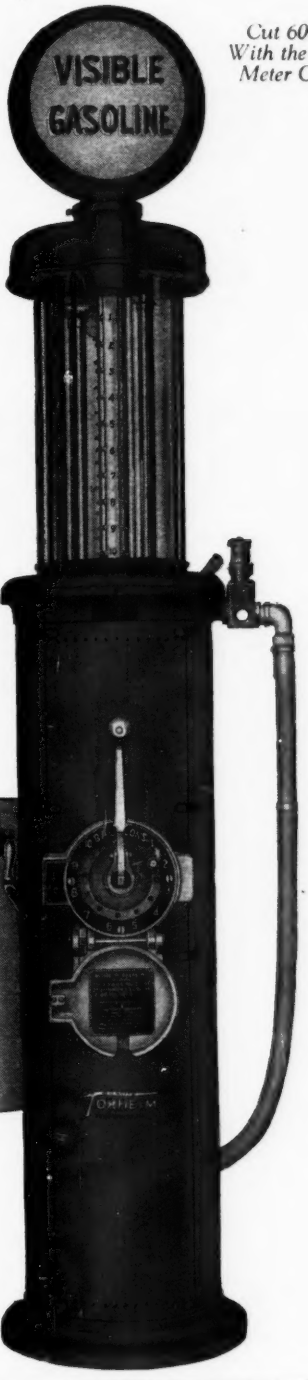
* * *

Nobody can say that C. A. Wheatly, San Antonio oil man, doesn't qualify as a fisherman. He can produce the evidence. Wheatley was recently elected president of the Texas division of the Isaak Walton league of America.

* * *

J. T. Duce of the New York organization of the Texas Co. is spending a few weeks in California making an economic study of oil conditions.

QUALITY TOKHEIM



Cut 600-605
With the Master
Meter Control

If you were to lay a magnifying glass over any part of a Tokheim Pump, you would find the same "quality" wherever you looked.

Quality is built into every part of every Tokheim product—on the surface, where you can see it for yourself—and underneath, where it takes the test of time and hard day-by-day usage to prove the superior service that Tokheim Pumps deliver.

Tokheim quality costs you no more, for Tokheim efficient large-scale production gives you extra pump value at no extra cost.

And the long use you get from Tokheim equipment saves you money in the end.

TOKHEIM OIL TANK & PUMP CO.
FORT WAYNE, INDIANA

Cut 610-620
Dry and Wet
Hose Models

New Types of Distilling Equipment Make Demands on Refractories

By Gustav Egloff* and L. A. Mekler*

Delivered before American Institute of Refractories, St. Louis

THE use of high capacity tubular cracking and topping stills introduced a refractory problem to the refining industry. In the past when distillation and cracking were carried out in shell stills the heating operation, by necessity, was conducted at low rates.

The shell stills and the refractories were kept at relatively low temperatures. The shut-down, stream to stream period was of sufficient time to allow the furnaces to cool off gradually and the refractories were not subjected to severe strains of rapid heating and cooling.

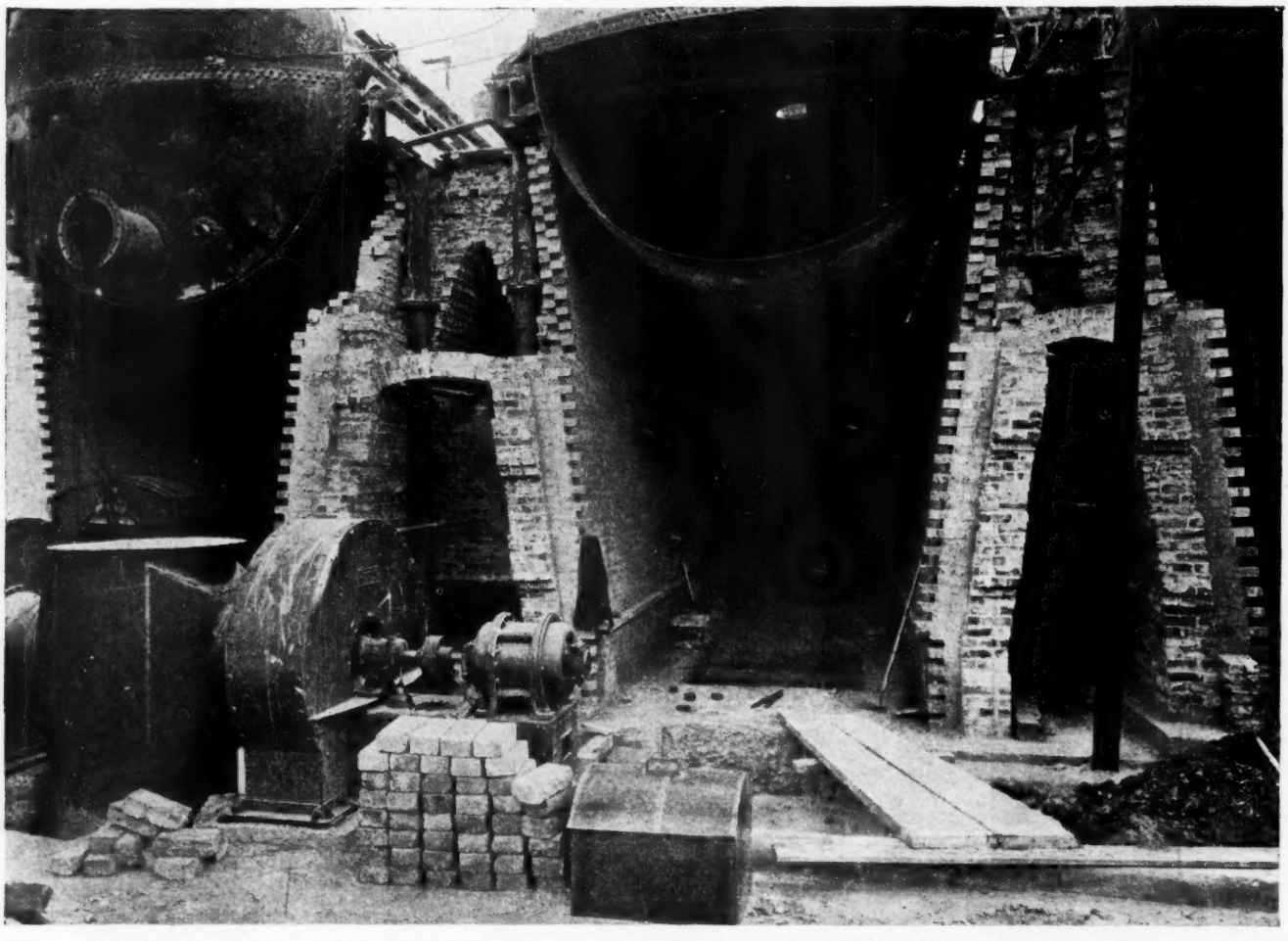
In the past few years the picture has changed considerably. The high capacity tubular stills for both cracking and topping require a high rate of heat transfer per square foot of tube surface and hence, a high differential between the temperature of the tubes and the products of combustion in convection type stills, or the tubes and refractory radiating surfaces in radiant type stills.

The temperature of the furnace refractories became higher and higher, particularly in the radiant heat type of furnace where in some portions of the still the refractories are at "white heat" or over 2000 degrees Fahr.

In addition to the increase in furnace temperatures the present type tube stills are allowed as short a time between stream periods as possible, so that aside from the higher temperatures to which the refractories are at present subjected, they also have to withstand rapid heating and cooling. It is this rapid heating and cooling which constitutes the greatest problem in the choice of refractory materials for refinery operations.

The non-spalling quality of the refractory, that is, the ability to withstand repeated heating and cooling without disintegration and breaking off, or spalling of the surfaces exposed to the furnace temperatures, is probably the most important characteristic of a refractory to be considered. Of the many materials used in the preparation of refractories for high temperature work and rapid

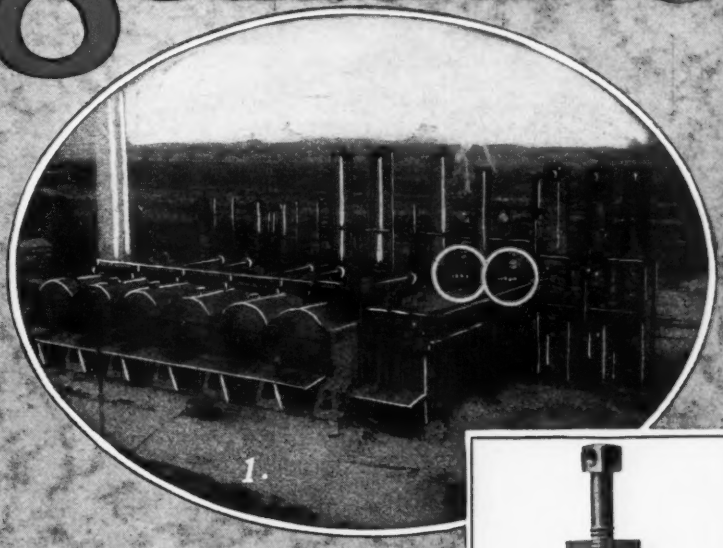
*Universal Oil Products Co. Research Laboratories, Chicago.



Where refractories are used in the settings of shell stills. These are units at the plant of the Associated Oil Co., Avon, Cal., which are being fitted with the Stratford high velocity circulation system. Note pile of fire brick in the foreground

In Argentine

lubricated Valves *for* *gas and refining*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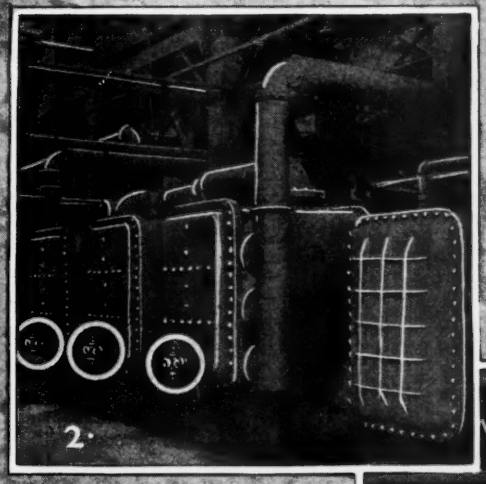
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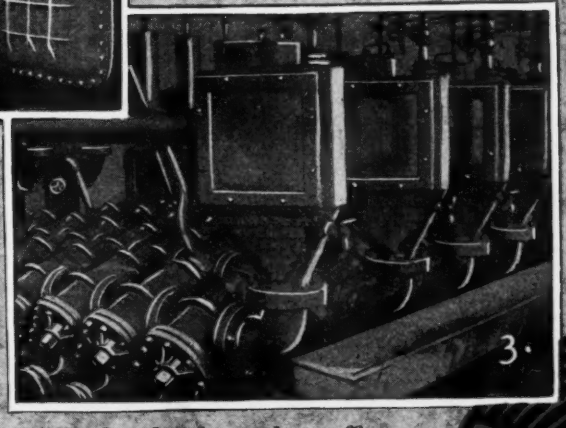
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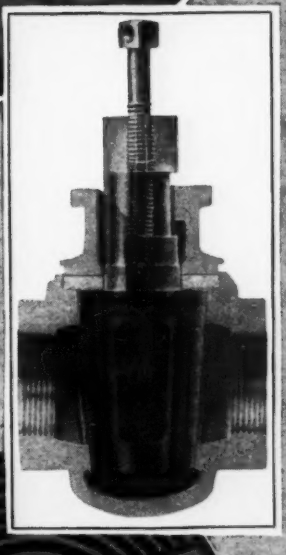

One of the largest oil and gasoline refining plants in South America, located at La Plata, 50 miles from Buenos Aires, is equipped with Nordstrom Valves.

Photo No. 1 is a partial view of the plant, showing location of Heat Exchangers with these valves. No. 2 shows a close-up view of Heat Exchangers with Nordstrom Valves. No. 3 shows part of a battery of 152 Nordstrom 4" 3-way Valves in the Look House.

Provide absolute shut-off

Selection of Nordstrom Valves was made for this thoroughly modern plant after very careful investigation. Operators in this and other plants can depend upon these Valves for absolute shut-off, quick and easy turning, resistance against corrosion and elimination of leaks. Ask for Catalog.

MERCO

TRADE MARK

Merco Nordstrom Valve Co.

SUBSIDIARY OF THE MERRILL COMPANY

Engineers.... Manufacturers

SAN FRANCISCO, *121 Second St.*...CHICAGO, *Peoples Gas Bldg.*...CLEVELAND, *Engineers Bldg.*
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Factories: Oakland, California and Belleville, New Jersey ..... *Agencies in Principal Cities*

Nordstrom Valves

Billions of Bubbles

Pat couldn't wait for the Train

The Irishman who decided he didn't have time to wait for the train soon discovered his error of judgment. Many Operators of natural gasoline absorption plants are trying to get along with obsolete equipment and slow methods that give no assurance of completely absorbing the gasoline while other Operators have taken the time to install the most approved system—Campbell Oil-Froth Absorbers.

Three times as much gasoline in California is produced by Campbell Absorbers than by all other Absorbers combined—forceful testimony of the phenomenal success attained on the Coast.

Ask for Catalog

CAMEL-DAY GAS

J. A. Campbell

Natural Gasoline Engineer

Consulting — Designing — Constructing

P. O. Box 669 Long Beach, Calif.

Campbell
Oil-Froth Absorbers

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses *Wax Moulding Presses*
Wax Distillate Chilling Machines *Scale Wax Cooling Drums*
Wax Testing Presses *Paraffine Wax Sweater Plants*
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
Oil Burning Systems *Complete Power Plant Equipment*

BETHLEHEM STEEL COMPANY, *General Offices, Bethlehem, Pa.*

District Offices

New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo
Cleveland Detroit Cincinnati Chicago St. Louis San Francisco
Los Angeles Seattle Portland

heating and cooling, the most suitable are these which after firing give a comparatively porous structure and have the minimum of so-called secondary shrinkage, a shrinkage induced by repeated heating and cooling.

A large percentage of pre-calcined material or grog, is particularly desirable in a refractory to make it non-spalling because pre-calcining takes up most of the shrinkage of the clay when subjected to high temperature conditions. Grog used in the refractory is in much larger particles than the raw clays.

A body rich in grog will therefore give a finished refractory with a larger percentage of voids which would help to take up the stresses set up in the refractory due to repeated heating and cooling and would therefore reduce its spalling tendency.

There are a number of high grog refractories on the market, and even though they are considerably more expensive than the regular type, they will prove more economic in the long run due to the fact that under repeated heating and cooling they will outlast an ordinary refractory in a ratio of approximately three to one.

The refractories for refinery use need not have a high fusion point. The temperature at which first quality refractories will fuse is so high that the still itself will either coke up or the tubes will burn out before such a condition is reached. Therefore, the fact that one refractory fuses at 3300 degrees Fahr. and another at 2900 degrees Fahr. does not necessarily mean that the first refractory is more suitable for refinery operation. Neither refractory will ever reach the fusion temperature in a properly operated still, unless accidentally.

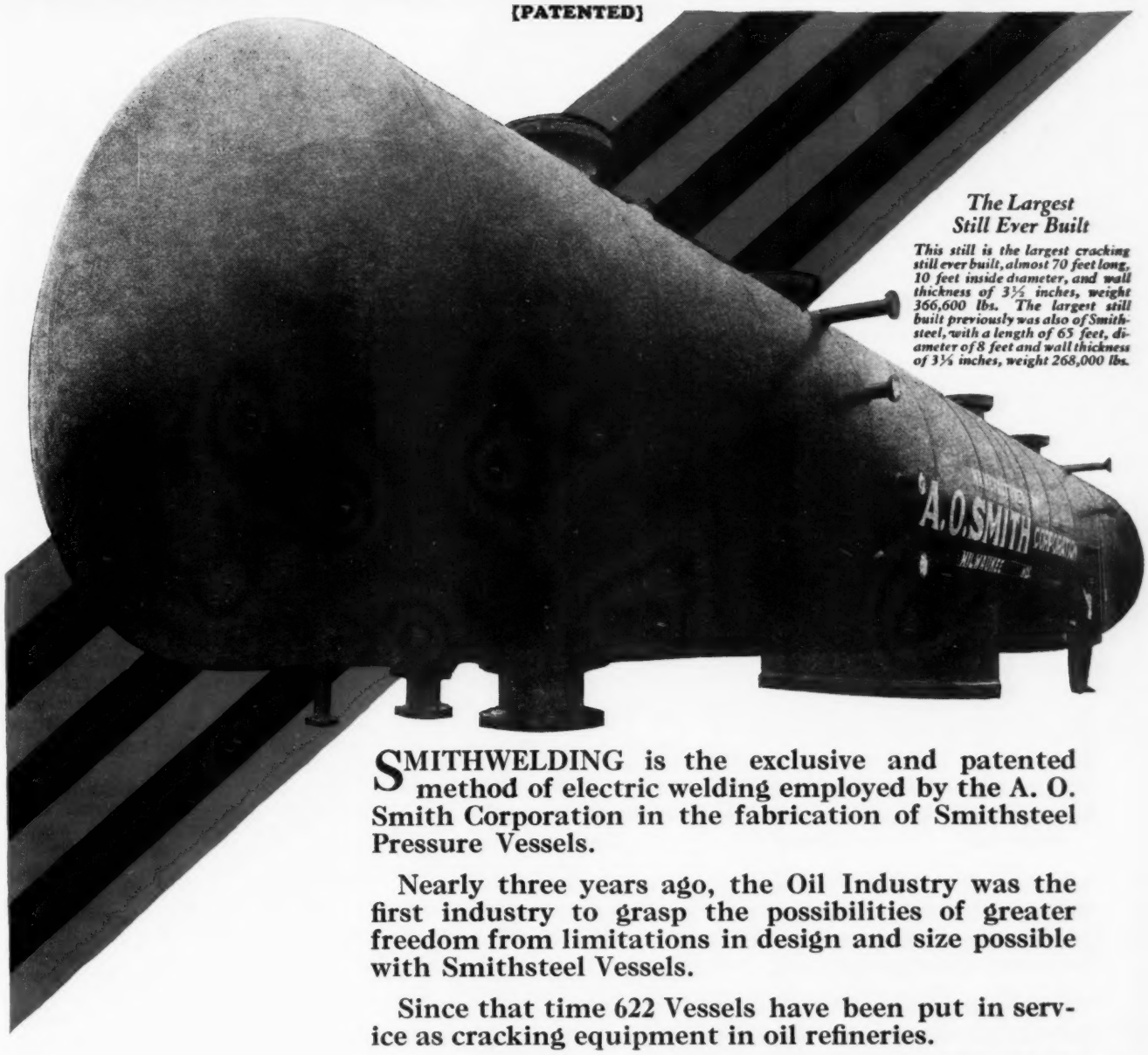
A much more important property of a refractory is its ability to maintain its shape and rigidity above the operating temperatures of the tube still, approximately 2000 degrees Fahr. or so. Some types of refractories soften gradually and begin to deform permanently at temperatures of 1500 to 1600 degrees Fahr.; other types remain as rigid as when at atmospheric temperature at much higher temperatures and they start to soften rather suddenly.

The second type is preferable for refining operations, to the first. Many manufacturers at present, among other specifications, give the hot load test of their materials and this figure is much more important than the fusion temperature and the tensile strength of the refractory when cold.

A refractory for refinery use should run true to size and have as sharply defined edges as possible. In tube still construction the refractory has to tie up with pipe work and unless it is true to size considerable cutting and fitting will be

SMITHWELDING

[PATENTED]



The Largest Still Ever Built

This still is the largest cracking still ever built, almost 70 feet long, 10 feet inside diameter, and wall thickness of 3½ inches, weight 366,600 lbs. The largest still built previously was also of Smithsteel, with a length of 65 feet, diameter of 8 feet and wall thickness of 3⅛ inches, weight 268,000 lbs.

SMITHWELDING is the exclusive and patented method of electric welding employed by the A. O. Smith Corporation in the fabrication of Smithsteel Pressure Vessels.

Nearly three years ago, the Oil Industry was the first industry to grasp the possibilities of greater freedom from limitations in design and size possible with Smithsteel Vessels.

Since that time 622 Vessels have been put in service as cracking equipment in oil refineries.

They are all in service *today* and all are Smithwelded.

A. O. SMITH CORPORATION
General Offices—Milwaukee, Wisconsin

Oil & Gas Field Products Division
District Offices at New York, Pittsburgh, Tulsa, Houston, Los Angeles

Special Muleskin Folio

Your Name in Gold FREE

Complete Net $7.50

362K—Special made folio from heavy double weight muleskin in handsome shark grain. Has three pockets, heavy leather straps and handle, good lock, bottom reinforced with steel studs. Inner case contains six 4-oz. bottles, partitioned separately, lined with red velvet. Metal capped corks furnished. Case also contains five grease jars.

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, Kansas City, Mo.

More *cleaning* power to you!

WHEN you have Oakite materials to help you remove dirt, oil and grease, you have sufficient power to take the toughest cleaning job "in high"!

Storage tanks and trucks are cleaned in less time, with less labor; drums are washed, inside and out, thoroughly and easily; floors and concrete driveways made spick and span with a minimum of effort.

Directions for using high-power Oakite cleaning materials are contained in booklet "Oakite in the Oil Industry." Your copy is ready and will be sent on request.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

Oakite is manufactured only by
OAKITE PRODUCTS, INC.
42C Thames St., New York, N. Y

OAKITE
Industrial Cleaning Materials and Methods

required to meet pipe connections of the balance of the refinery apparatus. Brick work in general, and for refining operation in particular, is best laid with as little fire clay or other cements as possible.

A close brick to brick joint with the bricks just surfaced in a thin clay batter is ideal.

This can only be obtained when the surfaces of the refractory are practically true and where the dimensions in all three directions vary as little as possible.

From this point of view a repressed refractory, that is, one pressed a second time after drying, or a dry pressed refractory, that is, one made out of practically dry material under high pressures, is preferable to other types.

In a properly controlled tunnel kiln each individual piece usually has the same thermal treatment because the material travels at uniform speed through different heating zones carefully maintained at the desired temperatures. This results in a uniform temperature and time factor to which each piece is subjected while being fired in the kiln.

In periodic kilns there is quite a difference in both temperature and time to which different pieces are subjected, not only from kiln to kiln but even in the same kiln. In the usual down draft kiln the pieces near the fire boxes will be much harder fired than those in the center.

There is also usually a difference in the degree of firing between pieces in the top of the kiln and near the bottom. A difference in thermal treatment means naturally a difference in shrinkage, porosity, hardness and the internal strains of the refractory. At some plants this difference is so great that first and second quality refractories are fired in the same kiln.

A still laid up with a refractory made in a tunnel kiln will stand up better and have a smaller tendency to crack at the joints or crawl out of line than a still laid up with a refractory made in a periodic kiln.

In a properly designed tube still there is apparently no real need for super-refractories such as silicon carbide, aluminum oxide, mollite and some of the precalcined refractories prepared primarily to have a high fusion point. As mentioned above, their superior refractory qualities will serve no special purpose.

Some stills use carborundum in the combustion chambers of the tunnel type but there the material is used not for its high refractory qualities, but for its conductivity in order to obtain a maximum amount of shielded radiant energy in the still.

In recent years a number of manufacturers have been experimenting with refractory insulating materials. These materials combine within themselves the properties of a refractory and insulating material in so far as they withstand high temperatures without deterioration and also have a much smaller coefficient of heat conductivity than an ordinary fire clay refractory.

A few such materials are already on the market and a number are undergoing service tests under actual working conditions at operating temperatures up to 2500 degrees Fahr. Such materials have a number of advantages over the ordinary fire clay refractory. They are usually approximately half the weight of an average fire clay refractory.

Their heat conductivity is approximately one-quarter to one-third that of fire clay refractories and with some brands approaches the conductivity of calcined insulating materials made to withstand temperatures of 1200 to 1600 degrees Fahr. On an average a 9-inch wall of this material is equivalent in its insulating and refractory properties to 9 inches of fire brick, 4½ inches of standard insulating material and 4 inches of red brick, and weighs approximately 50 pounds per square foot as against more than 200 pounds for the composite wall.

Insulating refractories are by necessity porous and while this is an advantage from the point of view of spalling, it makes them subject to disintegration by the action of combustion gases. To avoid infiltration of the products of combustion into the body of insulating refractories they are usually covered with a wash of refractory cement which vitrifies under the operating temperature of the furnace.

Still brick work laid up with a refractory insulating material, being lighter in weight than the conventional brick work, has a smaller heat storage capacity than the average still brick work.

This means not only a saving in the fuel required to bring the refractories to the operating temperature but a considerable time saving in the heating up and cooling of the tube still. A wall laid up of only an insulating refractory would be structurally stronger than one composed of fire brick, insulating brick and red brick, because each of the materials in the composite wall is at a different temperature, has different coefficients of expansion and would tend to put the furnace wall under a strain.

Most of the weakness of conventional furnace structure develops due to strains which would be absent in a tube still built up comparatively of smaller thickness and of uniform insulating refractory.

As soon as the insulating refractories are out of the semi-experimental stage in which they are at present, particularly as it applies to their mechanical strength and the ability to withstand actual operating conditions for a long time of service, it would pay the refining industry to consider their adoption for still construction on a commercial scale.

PROFITS
made in styles station needs

Fig 464-P

New Erie Tandem Meter Pump

Combines facilities for serving two grades of gas from one pump. In this unit two pumps with either two or four outlets are enclosed in one cabinet.

In the first cost an Erie Tandem Meter Cabinet is less than two pumps; installation and operating costs are lower. That's not all: Erie Tandem Units save space, centralize service at the most convenient point and are neater and more attractive in appearance. The Erie Tandem Cabinet shown here harmonizes with the "Trade Commander" unit shown on the opposite page.

Erie Masonry Type Units

For use in masonry piers, canopy columns, walls of stations, lighting standards and fences, we designed Erie Built-In Masonry Units.

Fig 151-H

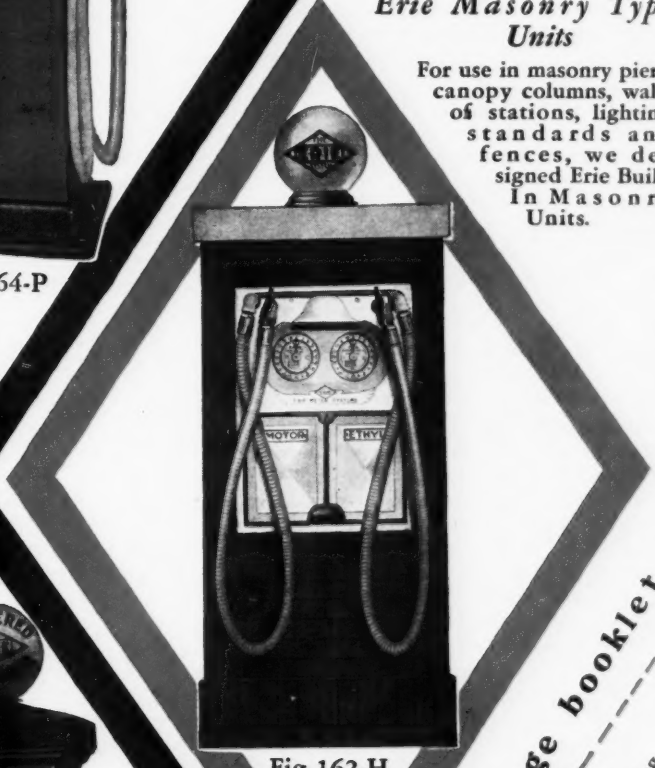


Fig 162-H

Erie Built-In Masonry

Units are adaptable to varied styles of architecture, making possible the achievement of distinctive and original effects. These Masonry Units are available in the advertising colors of your company.

Fig 551

Erie Metal Cabinets

One of the many outstanding features of Erie's service is a range of selection of cabinets in styles and color combinations to harmonize with various types of modern station architecture and to satisfy individual preferences.

Erie Tapered Panel Type Cabinets are particularly adaptable to certain styles of station architecture.

Send coupon now for new 16 page booklet

ERIE METER SYSTEMS, INC., *10th and Wallace Sts., Erie, Pa.*

Send me a copy of your new 16 page booklet illustrating and describing the Erie Meter System and telling how leading oil marketers have profited by the installation of Erie Meter Systems.

Your Name .....

Company .....

Address .....

City ..... *State* .....

Station's Free Car Delivery Service Brings Greasing Jobs

By Ward K. Halbert
N. P. N. STAFF WRITER

DELIVERY service for customers' automobiles has been instituted by the Davenport Oil & Supply Co., along with the other services of its complete lubrication station.

Customers no longer have to wait while their cars are being greased, shifting from one foot to the other because they feel they are going to be late for business in the morning, or late for dinner at night.

When a customer drives by the station in a hurry now he does not have to come under the canopy or on the driveway. If he indicates to one of the attendants he wants service but is in a hurry he gets immediate attention. Somebody will get in the car with him, stay with him until he has reached his destination and then drive the car back to the station to be worked on.

When the work is done the customer's car will be delivered to him, wherever he wants, provided it is in the city. Thursday following the Monday this service was announced to the motorists of Davenport, the station got 18 more customers than they would otherwise have had. The 18 cars accumulated at the station during the morning rush hour and were taken care of during the day.

The new business was mostly "velvet" because it did not increase the station's overhead in any way. The work was done by the same people with a slightly better organization of their time. Even Ben J. Gerwe, president of the company, who is always on the job at the station, drove some of the hurrying customers to work and brought their cars back for a greasing.

Davenport Oil & Supply Co. has but one station. It is a combination bulk and filling station at the approach of the Mississippi River bridge that connects Davenport, Ia., with Rock Island, Ill. But Mr. Gerwe is a merchandiser rather than a high-powered executive. His office is not up town nor is it secluded behind the bulk station. It is in the filling station where he can see every customer who drives by.

Besides Mr. Gerwe there are seven men and a girl cashier on the job at this station at the peaks of the day's business, which come early in the forenoon and late in the afternoon. The station is open all night. Having only one outlet the company does not need a truck. The bulk of the merchandise is handled by pump from the railroad siding to the customer. Mr. Gerwe anticipates a total 1928 turnover of 700,000 gallons.

"When I started up here a few years back," Mr. Gerwe said, "my friends said to me, 'Ben, you will lose your shirt! In six months you will be singing your swan song.' But I am here yet. If this is a swan song, all I want is a few more pieces in the orchestra."

When the delivery service for the lubrication department went into effect it was not announced with a flourish in the daily newspapers. Mr. Gerwe is a strong believer in direct mail advertising and keeps a live list of motorists. He announced the

This is the letter sent by the Davenport Oil & Supply Co. to selected persons on the mail list announcing the new free delivery service

Dear Mr. White:--

This is to offer to a limited number of business men a unique service we are sure will be welcomed. It is to extend to you a free "car delivery service".

When your car needs servicing;--the crank case, differential or transmission drained and refilled, the wheels greased and the oil cups filled, the batteries filled, the water in the radiator changed and the tires inflated--simply drive into this station.

One of our Service Men will drive you back to your offices without a moments delay. Tell him when you wish your car delivered. Your car will be waiting for you right on time. Everything you have specified will be thoroughly and expertly done.

Thus we eliminate all tiresome waiting and wasting your time;--or the inconvenience of walking from our station after leaving your car and walking back to call for it.

Remember,--you pay no extra for this service, nor are our Service Men permitted to accept tips.

Naturally, we can only make the offer to a limited number. So to insure that you may enjoy it, we are enclosing herewith a special card. Merely show this to the Service Man when you drive in.

"This car delivery service" was instituted for your convenience. We hope you will take full advantage of it.

Very truly yours,
DAVENPORT OIL & SUPPLY COMPANY.

new car delivery service by letter with a "trick enclosure." Mr. Gerwe gives much credit to the enclosure for success of the mailing piece.

It was a white card, 2½ x 4 inches, the size to fit in an ordinary card case. It was printed on such fine stock and looked so dignified that it would arrest the attention of almost anybody. The card entitled the holder to the company's special service. Every one was filled out in ink and carried Mr. Gerwe's original signature.

"This entitles Mr..... to enjoy the conveniences of our Free Car Delivery Service," read the card.

"Receiving the complimentary card told the prospect at first sight that his business was appreciated," Mr. Gerwe says. "It made him understand that he had been picked out from others as a customer whose patronage was worth while and profitable to the company. That made him read the letter that brought the card, although he might know that a great many other people besides himself had received it that very day.

"Of course we are willing to perform this service for anybody who has the money to pay for the greasing job. Having the card is not actually required of persons who want us to come for their cars and deliver them after the work is done. Nevertheless business men all over this town carry those cards in their card cases, along with their club memberships."

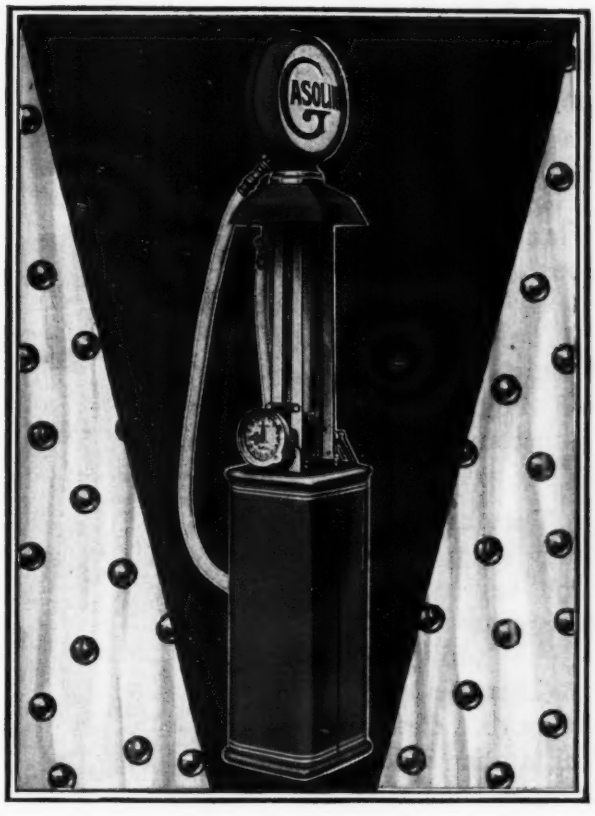
The company's complete mailing list was not circularized with this special mailer. The list was kept exclusive. This was done mainly because the value of it depended upon its being exclusive. Therefore it went out only to a "hand picked" group of business men. They were mostly men who had offices in the down-town district, because the unusual service would not consume so much time with nearby customers.

The service was not extended to Rock Island, at least not at first. Mr. Gerwe was careful not to take on an additional burden of free service that would swamp his organization or involve any additional expense until it was tried out.

In actual practice, a great deal of the routine of paper work incidental to a complete lubrication job for one of these "rush customers" is done in the machine while the customer is driving from the service station to his office. Suppose George White should halt in front of Mr. Gerwe's office window this morning and ask for the special service.

One of the men at the station would climb into the front seat with him and Mr. White would start toward town. The station salesman would immediately take a card from his pocket and start filling it out. At the top he records the date, customer's name and address and the make of the car, the speedometer

The Speedy "BALL-BEARING" Pump at a New Low Price!



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The experience of 39 years has made the form of the Allison Coupon Book simple, practical and dependable. Progressive, wide-awake filling stations are exclusive users. Every book guaranteed to be absolutely accurate. Furnished in stock or special designs. *Send for samples and prices.*

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Good Will

is an important factor in any successful business. The Humble Oil & Refining Company appreciates that to hold your good will it is necessary to supply you with products, the sale of which will gain and hold the good will of your customers.

Humble Motor Oils satisfy. They are produced only from high-grade cold-test crudes and are "straight run." They are not mixed or blended. Humble Motor Oils are of a clean, beautiful amber color and have just the right body to properly lubricate all bearing surfaces, and when burned leave little carbon to foul the motor or contaminate the crankcase mixture.

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Houston, Texas

Producers - Pipe Lines
Refiners - - Marketers

"Zero Cold-Test Oils"

HUMBLE OIL & REFINING CO.
HUMBLE OILS
Reg US Pat Off
HOUSTON, TEXAS

reading, and then start asking questions.

All the questions are printed on the card. He asks what kind of gasoline the customer wants his tank filled with; if he wants his crank case drained and refilled; if he wants his transmission and differential oil renewed or only checked to see if they require it; if he wants his chassis greased; if he wants his wheels lubricated; if he wants a vesuvius job on his springs, and if there is anything else special he would like done.

Notations of service on a car are made on this ticket

No. 5151

Davenport Oil & Supply Co.

Date .....
Name .....
Address .....
Car .....

PRICE

Gasoline—Medium .....
Gasoline—High .....
Drain Crankcase .....
Drain Transmission—Check .....
Drain Differential—Check .....
Greasing .....
Greasing Wheels .....
Vesuvius .....
Miles .....
.....
Attendant .....

Total .....

FREE SERVICE

Check Battery .....
Air Pressure .....
Vacuum Cleaning .....
Windows Washed .....
Time Wanted .....

Date ..... No. 5151
Attendant .....

* * *

When the owner receives his car he finds this card under the windshield wiper or on the steering wheel

Date.....

WE THANK YOU
for your patronage

Your windshield has been cleaned.
Your radiator has been filled.
Your tires are properly inflated.
Your battery has been checked.
Your gas tank is.....full.
Your oil gauge shows.....

Come Again

Davenport Oil & Supply Co.
2nd Street at the Bridge
Davenport, Iowa

The customer drives while the salesman writes or makes check marks on the card, and in two blocks of driving the order is taken. When the customer reaches his office door and gets out of the car the salesman slips over under the wheel, asking:

"And when must you have your car, Mr. White?"

"Two o'clock will be early enough."

"All right sir, I will park it as close to the office as I can and bring you the keys between 1:30 and 2 o'clock this afternoon."

The attendant tears a stub from the end of the card he has been writing on, gives the stub to Mr. White and ties the card to the steering wheel with a string. Back at the station Mr. White's car is serviced according to the notations on the card. If possible the same attendant delivers the car to its owner.

The man has duties at the station of course and has no time to waste. He parks Mr. White's car at 1:30 in the afternoon as near to where he left Mr. White that morning as city traffic laws permit; locks the machine and takes the key to Mr. White's office, saying as little to him as is necessary and accepting no gratuity.

But when Mr. White leaves his office that afternoon and goes for his car it looks different. When he gets inside he finds a card and a box of safety matches sticking in his steering wheel levers or in the frame of the windshield. The matches carry an advertisement for Davenport Oil & Supply Co., and the card tells what has been done to the car.

Wisconsin 'Gas' Tax Law Attacked in Court

MILWAUKEE, May 4.—Wisconsin's gasoline tax law is under fire.

The city of Racine has started an investigation directed by its city attorney, M. R. Paulson, and papers have been filed with the supreme court of Wisconsin. Unconstitutionality is claimed on account of a refund measure adopted when the tax went into effect, applying to border cities.

When Wisconsin legislature passed the gasoline tax law Illinois had none. Oil men in towns like Racine and Beloit, on or near the Illinois line, had difficulty meeting competition from nearby Illinois jobbers. Later Illinois passed a tax law and kept it nearly eight months. During that period the refund law in Wisconsin was inoperative. But when the Illinois law was knocked out last Feb. 24, Wisconsin met again the same old difficulty.

Immediately some of the Wisconsin jobbers in border cities quit collecting the tax, selling their gasoline at the same price as it was sold in Illinois. But the Wisconsin tax department ordered them to resume collecting the tax from the public and paying it to the state, pending the refund from the state. This did not solve the competitive problem of the Wisconsin jobbers in border towns and Racine attacked the tax law on constitutional grounds.

More Days on the Job *per Dollar Spent*

MEASURE your tank wagon hose cost as if it were wages—so much per day's work—and you'll find out why TRIPLEXD wins with firms who study costs.

You get more work for each dollar you spend on a length of TRIPLEXD because it has been built to stand the usage a tank wagon hose must get. ***It is not merely a pump hose made larger.***

Accidents will happen, so it is an additional advantage that you can get any length of TRIPLEXD repaired at our factory (or, if it is beyond repair, have its couplings salvaged and installed on the next hose you buy). This service costs you nothing but the shipping charges.

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INCORPORATED
236 Tillary Street
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TRIPLEXD
TANK WAGON HOSE

Cushing Oil and Gas Field*

T. E. Weirich

THE Cushing oil and gas field occupies an area of 34 square miles in Twps. 16, 17, 18 and 19 N., R. 7 E., in the northwestern part of Creek County, Okla.

The discovery well was drilled in March, 1912, on a recognized anticline. This occurrence of oil and gas "on structure" was an early stimulus to petroleum geology in the northern Mid-Continent region.

Previous literature is available embodying early history and development of the field (1). The present paper is devoted to more recent findings and conclusions.

Acknowledgments

The writer is greatly indebted to the many Oklahoma geologists whose data and materials have been invaluable in the preparation of this paper. Mr. McGirl and his staff of the Silurian Oil Co. have been especially helpful, having furnished much material and drill cuttings from about 25 wells in the vicinity of the Dropright dome, where subsurface geology cannot be interpreted by the ordinary well-log correlation methods.

Oil and Gas Production

Oil and gas occurs at the crest of the anticline in the Layton, Jones, Wheeler (2), Prue, Skinner, Red Fork, (3) and Bartlesville sands of Pennsylvanian age and in the "Wilcox sand" (4) and Arbuckle limestone of Ordovician age.

The Layton sand produces throughout an area of 14 square miles. Due to the prolific productivity of deeper sands, the Layton horizon was given little attention at the crest of the anticline. The Wheeler lime produces mainly on the west flank of the anticline. Production from this horizon was short-lived. Many wells were abandoned after producing but a year. Areal extent of production from the Wheeler covers nearly 11 square miles.

Oil occurrences in the Prue, Skinner, Red Fork, and Jones sands are quite insignificant in the Cushing field proper. Production in the Skinner sand is limited to Secs. 2 and 3, T. 18 N., R. 7 E., and the southeast portion of T. 19 N., R. 7 E. The Bartlesville sand produces throughout an area of approximately 28 square miles. Production of oil and gas from the "Wilcox sand" and Arbuckle limestone is restricted to the very crests of the domes. It is significant that the Arbuckle limestone produces only on the Dropright dome where the "Wilcox" has been removed.

Total production of the entire field to Jan. 1, 1928 was 283,894,274 barrels from 21,850 producing acres, an average per acre yield of 12,993 barrels.

The total recovery is exceeded only by two other fields in the United States, the Midway-Sunset and Coalinga fields of California. The peak of daily production of 305,000 barrels was reached in May, 1915, the field then being three years old.

Daily production on Jan. 1, 1928, was 21,050 barrels from 2375 wells. These figures are but approximate due to unrecorded waste of oil during early stages of development and the possible addition of production from nearby fields.

Development of the Cushing field occurred during an extraordinary period of Bartlesville sand exploitation in Oklahoma. The Nowata, Bartlesville, Glenn, and eastern Osage County fields gave the Bartlesville sand a distinction for productivity unexcelled by any other oil sand. Cushing added fame to this horizon.

Recovery of oil from each individual sand at Cushing cannot be differentiated. Total average per acre yield from the Bartlesville sand would certainly not exceed 8000 barrels. Later in the present discussion the Bartlesville sand will be shown to be resting unconformably upon the "Wilcox sand" and other Ordovician beds. Oil from the "Wilcox sand" may have migrated through this unconformable contact into the immediate overlying Bartlesville sand, lending a greater quantity of oil to the latter than was normally present.

Stratigraphy

Surface

The Pawhuska and Buck Creek formations of late Pennsylvanian age outcrop within the area. Limestone members of the Pawhuska formation are generally used as key horizons for surface mapping.

Subsurface

The underlying Pennsylvanian section is composed mainly of shales with alternating limestone and sandstone beds.

Unfortunately, very poor records of formations penetrated were kept during early stages of operations in the field. No drill cuttings were saved. More recent exploitation for deeper horizons has been the means of supplying samples of the pre-Pennsylvanian section. The so-called "Tucker" sand lies at intervals from immediate contact with the base of the Bartlesville sand to 200 feet below it. Samples of the Tucker sand exhibit all the characteristics of the "Wilcox sand." The individual grains are rounded and frosted. In some samples the sand grains are intermingled with green shale.

The Tucker sand rests on a dolomitic limestone of Arbuckle age, which, in turn, rests on pre-Cambrian granite. Stratigraphically, then, as well as lithologically, the "Tucker" sand is a drillers' misnomer for "Wilcox sand." At the Dropright dome, centering in the northwest portion of T. 18 N., R. 7 E., the "Tucker" sand is in reality Arbuckle limestone in juxtaposition to Bartlesville sand. (Fig. 4).

This unconformable condition of lower Pennsylvanian rocks resting on Ordovician strata is present in a similar manner in other Oklahoma and Kansas fields, as Cleveland, Tonkawa, Garber, Thomas, Hubbard, Blackwell, Augusta and El Dorado. Absence of the Mississippian section and identity of the Ordovician rocks at Cushing was originally reported by Aurin, Clark, and Trager (5).

Structural Geology

The surface is characterized by an anticline with a north-south axis, in general. (Fig. 1). On the anticline are four distinct domes. The main axis includes the Dropright, Drumright, and Shamrock domes. The Mount Pleasant dome acts as a "spur" from the main anticline.

The underlying Pennsylvanian rocks are folded quite similarly, except that divergence of beds basinward causes greater steepening of dip with depth. These slightly incompetent rocks rest unconformably on the underlying beds (Fig. 2).

(*Continued on Page* 92)

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(1) Frank Buttram, "The Cushing Oil and Gas Field, Oklahoma." *Okla. Geol. Survey Bull. 18,* (1914). *Carl H. Beal,* "Geologic Structure in the Cushing Oil and Gas Field," *U. S. Geol. Survey, Bull. 658* (1917). D. P. Wardwell and others, "Water Problems in the Northern Part of the Cushing Field, Creek County, Oklahoma," *U. S. Bureau of Mines,* February, 1927.

(2) The Wheeler "sand" is a limestone and is generally correlated with the upper member of the Oswego limestone.

(3) The Red Fork sand is commonly designated as the "Squirrel sand" in the Cushing field. The latter is equivalent to the Prue sand and obviously is not to be correlated with the Red Fork sand.

(4) The term 'Wilcox sand" is used in the text of this paper to include all those closely associated sands of Ordovician age, the Burgen, Tyner, and "Wilcox."

(5) F. L. Aurin, G. C. Clark, and E. A. Trager, "Notes on the Subsurface Pre-Pennsylvanian Stratigraphy of the Northern Mid-Continent Oil Fields," *Bull. Amer. Assoc. Petrol. Geol.,* Vol. 5, (1921), pp. 131-33.

ABSTRACT

THE Cushing anticline trends north and south. Its length is 20 miles. Oil and gas occur on the anticline in seven sands of Pennsylvanian age and in two Ordovician horizons. The producing area comprises 34 square miles.

Since the completion of the discovery well in 1912, all sands have produced nearly 300,000,000 barrels of oil. The average per acre yield to Jan. 1, 1928, was 12,993 barrels.

Field nomenclature of some of the producing horizons is at fault. The Red Fork sand is commonly logged as "Squirrel sand" by drillers. The "Tucker" sand is merely a local name for the "Wilcox" sand. Pennsylvanian strata rest uncomformably on pre-Pennsylvanian rocks. At the Dropright dome, Bartlesville sand (lower Pennsylvanian) rests on Arbuckle limestone (lower Ordovician). This unconformable condition is present but less pronounced throughout the entire field.

The east limb of the pre-Pennsylvanian anticline dips at a rate of 15 degrees, the west flank at a rate of less than 2 degrees. Several erosion cycles have affected the rocks in the Cushing district. The Hunton, Sylvan and upper Viola formations were removed from the area at the close of Devonian time.

During early Pennsylvanian time the first building of the Cushing anticline occurred. Subsequent erosion of the newly formed anticline resulted in the typical concentric distribution of outcrops about the anticlinal axis. Gentle uplifting continued during the deposition of the Pennsylvanian rocks.

The predominant west dip of surface beds throughout the region suggests a westward tilting of the Cushing anticline at some time after the deposition of the Pawhuska formation, outcrops of which occur in the Cushing field.

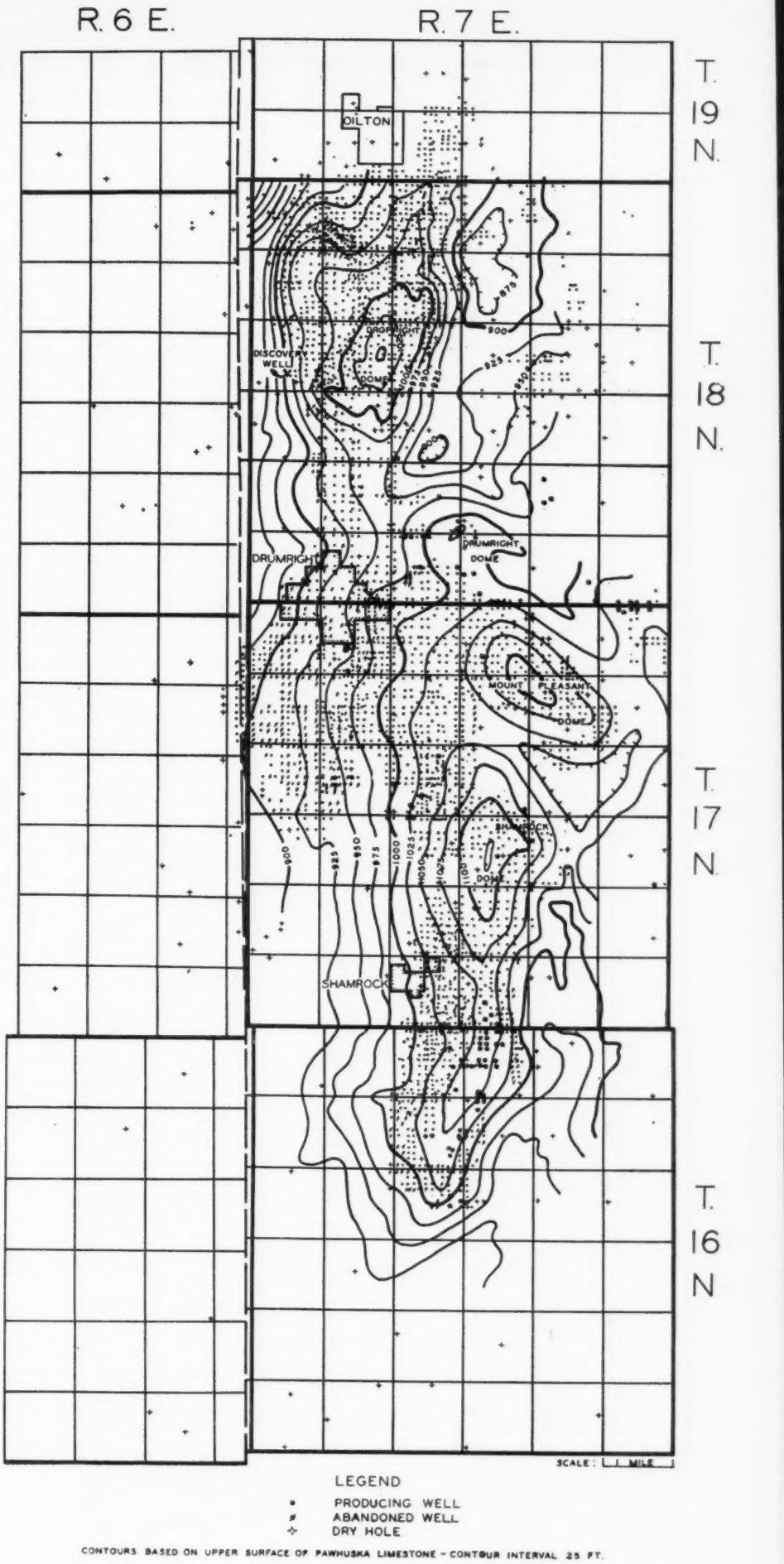

Fig. 1. Structure contour map of surface rocks in the Cushing field. Copied from map by Carl H. Beal, U. S. Geol. Survey, Bull. 658 (1917)

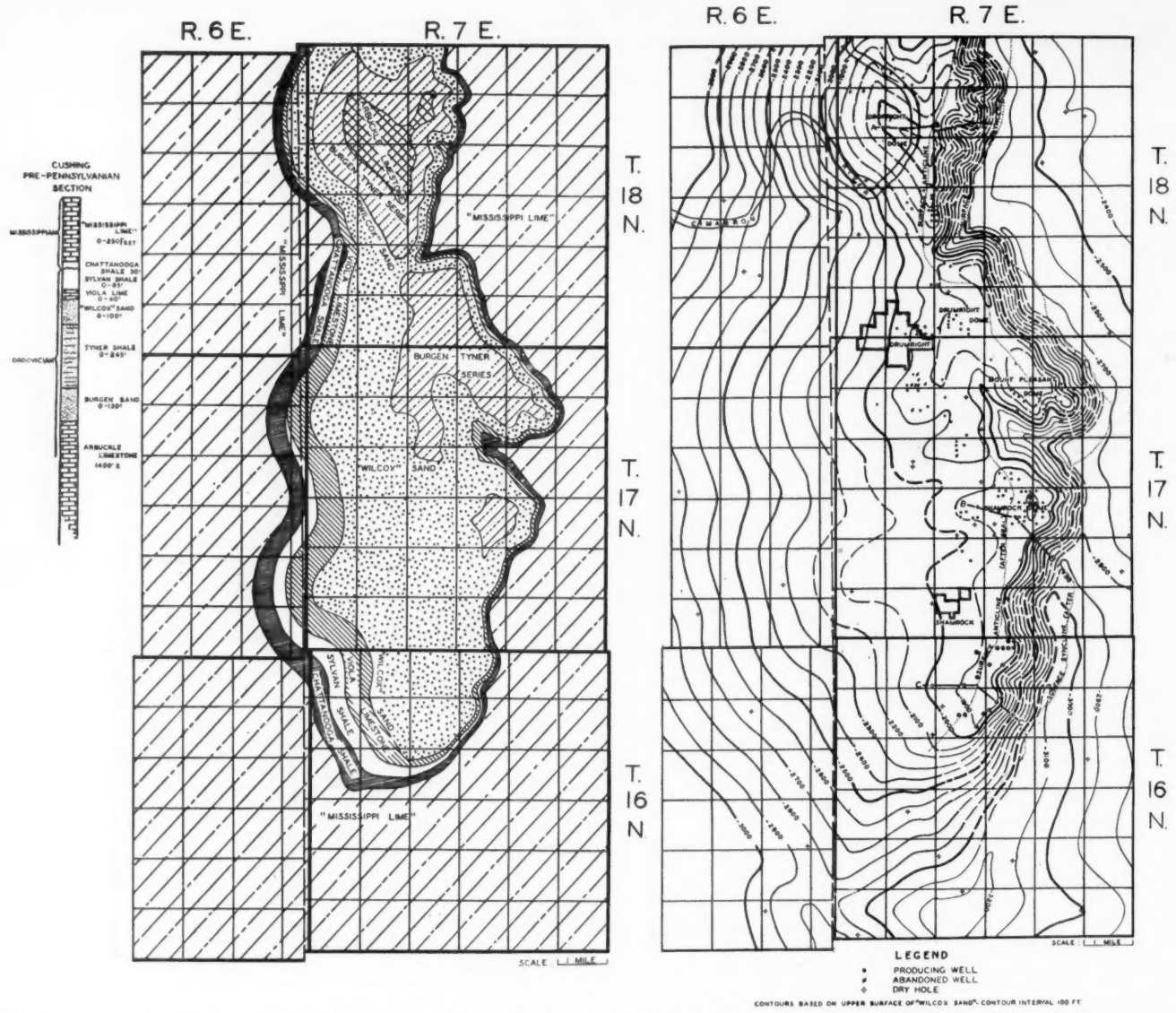

Fig. 2. Areal distribution of pre-Pennsylvanian rocks in the Cushing field. The Chattanooga shale (Mississippian) overlaps the Sylvan shale (Ordovician) along the south line of T. 18 N., R. 6 E. and in the northeast part of T. 16 N., R. 7 E. The Viola limestone is similarly overlapped in the northeast part of T. 18 N., R. 7 E. The map also illustrates approximately the areal geology of the district in early Cherokee time

Fig. 3. Structure contour map of pre-Pennsylvanian rocks in the Cushing field. Contours are inferred at the crests of the domes where the "Wilcox sand" has been removed (At right)

(*Continued from Page* 90)

One is at a loss in choosing a pre-Pennsylvanian datum for contouring, as each has been truncated from the axis of the fold. The writer has chosen the upper surface of the "Wilcox sand" as the most feasible key horizon in the absence of critical samples, inferring its attitude over the crest of the domes where the horizon is no longer present. (Fig. 3).

The pre-Pennsylvanian fold is characterized by a steep east flank, the beds being inclined 12 degrees from the horizontal. (Figs. 4, 5, 6). The west flank, on the other hand, is dipping westward quite gently except in the vicinity of the Dropright dome.

The east limb of the anticline dips so steeply as to suggest faulting. However, logs of wells within the area of steep dip exhibit shortened pre-Pennsylvanian sections as compared to those farther from the anticlinal crest. One would suppose, if faulting is present, that the section would maintain its normal thickness to the fault plane on the downthrow side. Nor does the area of steep dip follow a straight line, as would be expected in the case of faulting. The cross sections illustrated in Figures 4, 5, and 6 are constructed with the vertical and horizontal scale alike. Exaggeration of the vertical scale increases the rate of dip so perceptibly that faulting seems more reasonable than steep dip.

Historical Geology

Several wells in the general region have encountered pre-Cambrian granite. Presence of arkosic debris is noticed immediately overlying the solid granite. Resting unconformably on the arkosic material is the Arbuckle limestone of Cambro-Ordovician age. A regional period of erosion is known to have existed at the close of Arbuckle time. At Cushing 1405 feet of Arbuckle limestone is present in a well drilled on the Dropright dome. On the Shamrock dome, a structurally lower point, but 630 feet is present. The latter thickness indicates the presence of a fold in the vicinity of the Shamrock dome structurally higher than the surrounding region at the close of Arbuckle time.

Transgression of the sea during the remainder of Ordovician time resulted in the deposition of Simpson, Viola and Sylvan formations, with intermittent periods of erosion. Thickness of about 600 feet of these beds in central Oklahoma is slight as compared with the same section in the Arbuckle mountains on the south. In the latter region the post-Arbuckle Ordovician rocks have a maximum thickness of about 3000 feet. This difference of thickness may be accounted for partly by truncation at intervals progressively lower into the section, partly by convergence of strata, proceeding northward. At Cushing the Simpson section is represented by the Burgen, Tyner, and "Wilcox" formations, with a maxi-

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LIGHT	MEDIUM	HEAVY	SUPER-BRIGHT
Gravity - 30.3	Gravity - 29.8	Gravity - 29	Gravity - 27.5
Flash - - 435	Flash - - 445	Flash - - 465	Flash - - 560
Fire - - 500	Fire - - 510	Fire - - 530	Fire - - 630
Viscosity - 250 @ 100	Viscosity - 350 @ 100	Viscosity - 70-75 @ 210	Viscosity - 140 @ 210
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REAL PENN is refined from Butler County Pennsylvania amber-color crude—transported from wells in the refinery's own pipe line, and refined to specifications. (Compare these specifications with what you may be buying.)

You may sell under the *REAL PENN* brand or under your own name as desired.

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Shipments in straight or small 3-compartment tank cars, or carloads from refinery, and LCL from Chicago

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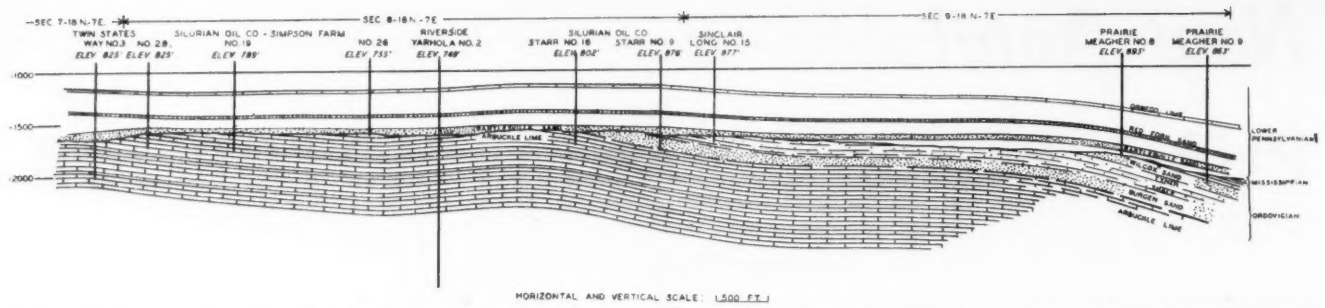


Fig. 4. East-west cross section, A-A, through the Dropright dome. The Bartlesville sand rests unconformably upon upper Arbuckle limestone and other Ordovician beds

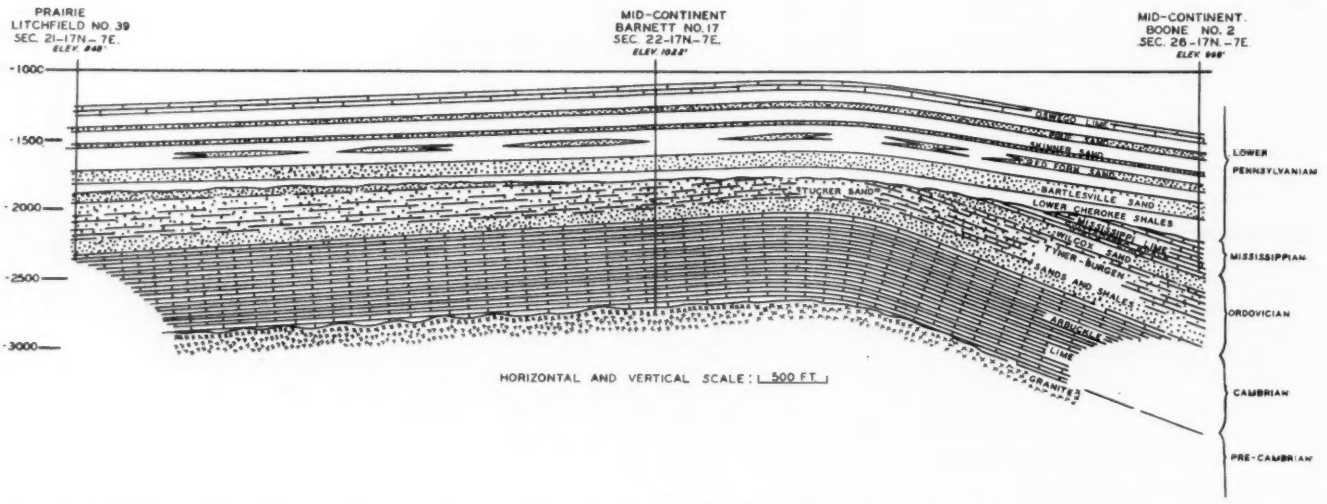


Fig. 5. East-west cross section, B-B, through the Shamrock dome. Drill cuttings from several wells on this dome clearly establish the "Tucker" sand as being "Wilcox" or its associated sands

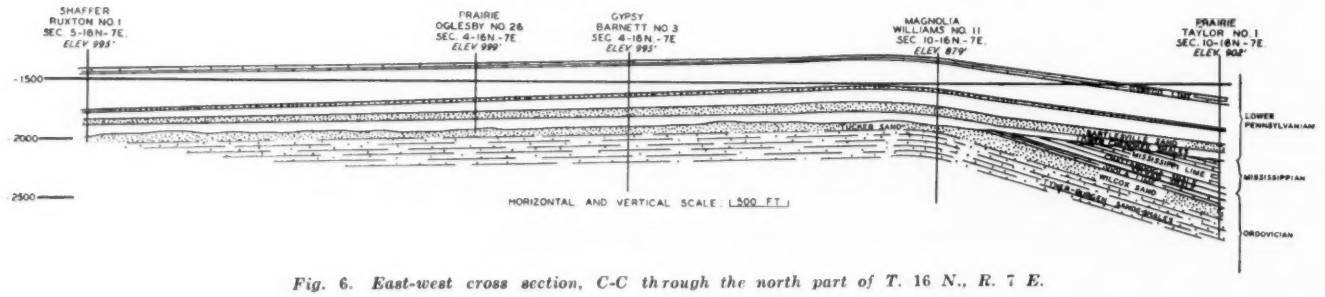


Fig. 6. East-west cross section, C-C through the north part of T. 16 N., R. 7 E.

mum thickness of approximately 475 feet. In the Arbuckle mountain region the Simpson section has a maximum thickness of about 2,000 feet. From this evidence it seems probable that the floor of the Arbuckle region was being depressed, or northern Oklahoma was being elevated relatively, during the entire period of Ordovician time.

Events during Siluro-Devonian time are unimportant for the present purpose. Evidence indicates that an unconformity exists between Silurian and Devonian rocks. At the close of Devonian time the rocks of northeastern Oklahoma were further uplifted (6) inclining the strata into a southwestern dip in the vicinity of Cushing. Exposure of these strata resulted in their truncation progressively lower into the section proceeding northeastward. The close of this erosional period found the exposed strata forming the typical belts of monoclinal structure. The northern limit of Siluro-Devonian rocks extended across northern Okfuskee and northeastern Lincoln counties. The underlying Sylvan shale outcropped in a broad belt tranversing the southwestern part of T. 17 N., R. 7 E. The Viola limestone, the succeeding lower formation, outcropped over the present area of the Cushing field, but was completely eroded in the northeastern part of T. 18 N., R. 7 E.

Submergence of these beveled strata resulted in deposition of the Mississippian Chattanooga shale and the "Mississippi lime" and a portion of the Pennsylvanian below the Bartlesville sand. The rocks at the end of this period of deposition suffered a most intensive warping, the first building of the Cushing anticline into its present form. The resulting areal geology, exposing all rocks from the pre-Bartlesville shales to the Arbuckle limestone, is illustrated in Figure 2.

Submergence and subsequent deposition of Pennsylvanian sediments over this abnormal arrangement of pre-Pennsylvanian strata continued throughout the remainder of the Paleozoic era. Divergence of beds basinward, together with an arching of the unconformable contact itself, indicates a gentle but continuous uplifting of the Cushing anticline throughout the Pennsylvanian epoch.

The last major movement to affect the Cushing district tilted the strata of the entire region westward, steepening the dip of beds on the west flank and moderating the reverse dip on the east flank of the Cushing anticline. For the present purpose it is sufficient to place the time of this uplift after the deposition of the Pawhuska formation.

(6) Luther H. White, "Subsurface Distribution and Correlation of the Pre-Chattanooga ("Wilcox" sand) Series of Northeastern Oklahoma," *Okla. Geol. Survey Bull. 40 B*, (1926).

Crude Output Rises; Largest Gasoline Production Adds Little to Stocks

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, May 5

ALTHOUGH the above ground stocks of petroleum continued to increase in March, the relative volume of stocks expressed in terms of days supply was smaller March 31 than Feb. 29, but still relatively larger than stocks a year before. The March 31 stocks, according to the Bureau of Mines, were 235.3 days' supply and the Feb. 29 stocks 245.7 days' supply. Stocks March 31, 1927, were 222.4 days' supply.

Crude oil production again turned upward in March and stocks of crude rose at only a slightly slower pace than in the few preceding months. In California, however, small drafts were made on both light and heavy crudes.

The largest average crude charges to stills in the history of the industry resulted in the largest output of gasoline. Demand for gasoline was much heavier and only 1,447,000 barrels went into storage. This was the smallest volume of excess supply in any March in the last five years.

The bureau report was compiled from the operating data of 320 refineries with a combined crude capacity of 3,100,000 barrels a day. These plants were being operated at 75 per cent of their rated capacity.

Petroleum Supply and Demand—Barrels

	Mar. 1928	*Feb. 1928	*Jan. 1928	Mar. 1927
Domestic Crude production: Light	65,896,000	60,076,000	64,266,000	65,435,000
Heavy	8,569,000	7,983,000	8,055,000	9,869,000
Imports of crude oil	6,845	6,036,000	6,145,000	4,434,000
Imports of refined oil	1,135,000	1,054,000	1,165,000	1,027,000
Natural gasoline produced	3,426,000	3,279,000	3,367,000	3,271,000
Benzol used in blending	238,000	217,000	226,000	226,000
Total new supply of all oils	86,109,000	78,645,000	83,224,000	84,262,000
Total stocks end of preceding month	603,376,000	596,302,000	584,184,000	536,118,000
Total supply of all oils	689,485,000	674,540,000	667,408,000	620,380,000
Exports of crude oil	1,530,000	1,243,000	1,232,000	1,199,000
Exports of refined oil	11,247,000	9,578,000	11,738,000	9,450,000
Domestic demand, crude and refined	67,524,000	60,373,000	61,114,000	65,248,000
Total demand	80,301,000	71,194,000	74,084,000	75,897,000
Total stocks of all oils end of month	609,561,000	603,753,000	596,302,000	544,483,000
Days' supply	235.3	245.7	249.4	222.4
Increase in stocks	5,808,000	7,541,000	12,118,000	8,365,000
Daily average new supply	2,778,000	2,712,000	2,685,000	2,718,000
Daily average demand	2,590,000	2,455,000	2,390,000	2,448,000
Daily average excess of supply	188,000	257,000	295,000	270,000
Crude stocks:				
East of California: Light	317,429,000	312,700,000	309,482,000	244,785,000
Heavy	50,670,000	50,640,000	49,410,000	45,325,000
In California: Light	19,633,000	20,110,000	20,493,000	29,568,000
Heavy	94,484,000	94,797,000	94,327,000	87,886,000
Total stocks of crude	482,216,000	478,247,000	473,712,000	407,564,000
Total stocks of refined	126,503,000	124,682,000	121,850,000	136,222,000
Stocks of natural gasoline	842,000	824,000	740,000	697,000

*Revised.

Crude Oil

The 70,000-barrel increase in crude oil production was largely in Texas. Average production in both Oklahoma and California was less than February average. Wyoming fields came up 7000 barrels daily average.

Although the March average production was 2.97 per cent more than February average production, it was 1.11 per cent less than the March, 1927, production.

Oklahoma production declined 80,000 barrels daily average from March, 1927, to March, 1928. Texas production has increased 135,000 barrels daily average in the year. California's has fallen 23,000 barrels daily average.

Production of the eastern fields was approximately the same in the first quarter of this year as in the first quarter of 1927, although a gain was reported by the Appalachian pools. The Mid-Continent's production for the quarter was 4.23 per cent larger than in the first quarter of 1926. Other fields have produced less oil this year than last and the gain in production for the whole country was only 0.09 per cent.

Refiners again increased their stocks of crude oil. The most important change in crude oil stocks at tank farms and in pipe lines east of California was in the Mid-Continent. Both heavy and light grades of California crude were lowered.

Runs to Stills

The January runs of all oils to stills averaged 2,526,816 barrels a day. This volume was 3206 barrels daily average more than the previous record runs of last November. Of the average runs 2,159,900 barrels was domestic crude oil; 166,700 foreign crude oil; 112,900 barrels unfinished oils rerun, and 87,300 barrels natural gasoline. These figures show gains in domestic and foreign crude oil but a recession of unfinished oils rerun and of natural gasoline.

Almost 90 per cent of the foreign crude oil is run by East Coast plants. The remainder is run by Gulf Coast

Crude Production—Barrels

(Daily Averages)

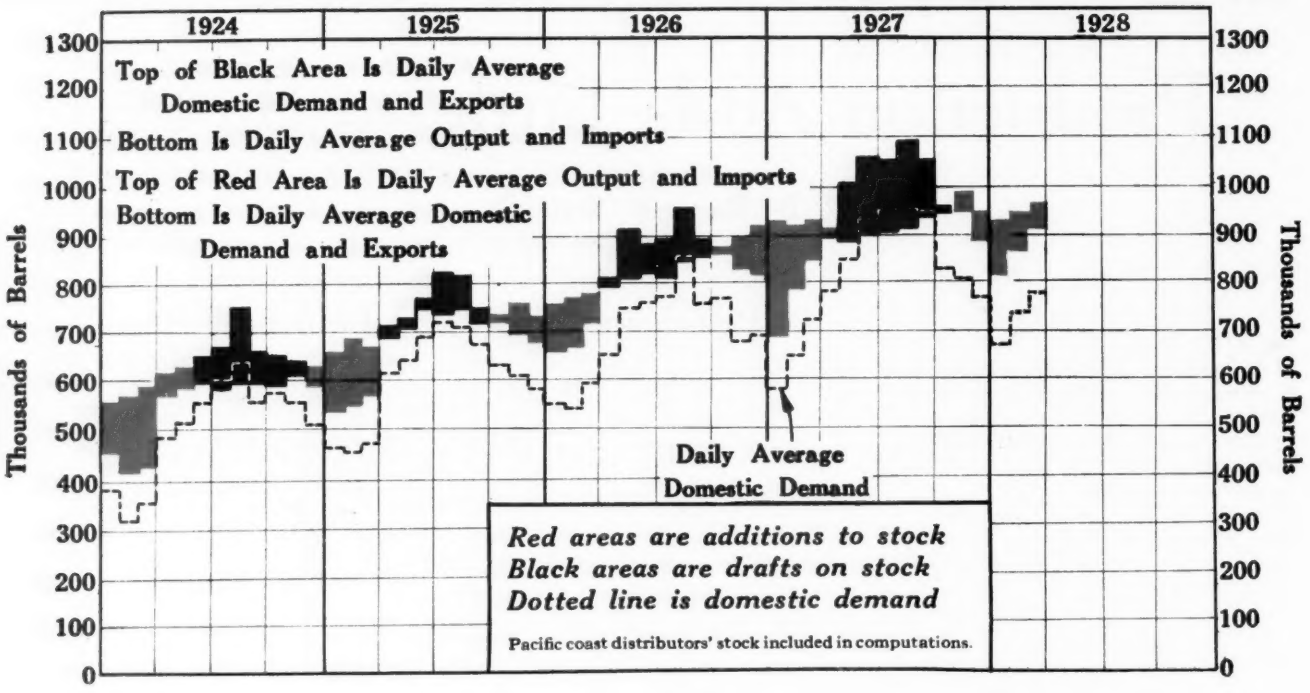
States	March 1928	*February 1928	March 1927
Arkansas	86,500	88,600	123,700
California	616,700	622,000	639,900
Colorado	8,400	7,900	7,800
Illinois	20,500	17,800	22,400
Indiana	2,500	2,800	2,200
Kansas	114,800	111,900	115,800
Kentucky	20,100	19,200	17,700
Louisiana			
Inland	43,000	44,400	51,400
Gulf Coast	14,200	13,500	9,000
Michigan	900	1,000	1,200
Montana	11,300	12,200	14,400
New Mexico	2,500	2,300	4,600
New York	6,400	6,300	6,300
Ohio	19,800	19,400	22,100
Oklahoma	646,200	655,800	727,700
Pennsylvania	26,900	26,600	27,200
Tennessee	200	100	100
Texas Inland	581,800	528,200	428,300
Gulf Coast	103,300	98,100	132,100
West Virginia	16,300	15,900	17,500
Wyoming	59,800	52,800	57,800
Total U. S.	2,402,100	2,332,800	2,429,200

*Revised.

Crude Oil Production by Fields—Barrels

Fields	March Daily average	February Daily average	Jan.-Mar. 1928 total	Jan.-Mar. 1927 total	Changes 1928 from 1927
Appalachian	85,200	83,200	7,452,000	7,305,000	+2.01
Lima-Indiana	4,700	4,500	401,000	466,000	—13.95
Michigan	900	1,000	90,000	96,000	— 6.25
Ill.- S. W. Ind.	22,800	20,400	1,878,000	2,008,000	— 6.47
Mid-Continent	1,472,300	1,428,900	131,223,000	125,889,000	+ 4.23
Gulf Coast	117,500	111,600	10,506,000	13,299,000	—20.96
Rocky Mountain	82,000	75,200	7,111,000	7,593,000	— 6.35
California	616,700	622,000	56,184,000	58,004,000	— 3.14
U. S. Total	2,402,100	2,346,800	214,845,000	214,653,000	+ 0.09

Gasoline Production and Consumption



March domestic output	943,000 Bbls. daily av.	March exports	130,000 Bbls. daily av.
March imports	8,000 Bbls. daily av.	Total indicated demand	906,000 Bbls. daily av.
Total new supply	952,000 Bbls. daily av.	Stocks March 31, 1928	40,229,000 Bbls.
March domestic shipments	776,000 Bbls. daily av.	Increase in stocks in March	1,447,000 Bbls.
		Stocks March 31, 1927	52,410,000 Bbls.

plants. California plants are the largest users of natural gasoline with Texas second and Louisiana-Arkansas plants third.

Gasoline

Gasoline production was curtailed in March in the East Coast, Appalachian, and California districts but increased elsewhere. Daily average production for the whole country was 20,000 barrels more than February average output, or 2.18 per cent.

March shipments of gasoline was 7.88 per cent more from all plants but were less than February shipments in the East Coast, Louisiana-Arkansas, and California districts. Imports were less and exports more.

Stocks of gasoline were lowered in the Appalachian, Louisiana-Arkansas, and Rocky Mountain districts, and March 31 were lower in every refining district than stocks March 31, 1927.

The March 31, 1928, stocks at the March rate of foreign and domestic demand was 44.4 days' supply, compared with 68.4 days' supply at the end of March, 1927.

Gasoline statistics for the first three months of 1928, compared with those for the first quarter of 1927, show the following:

1. Gasoline output was increased 3,029,000 barrels or 3.74 per cent.
2. Imports fell 236,000 barrels or 16.51 per cent.
3. Total new supply increased 2,793,000 barrels or 3.39 per cent.
4. Domestic shipments increased 7,342,000 barrels or 12.49 per cent.
5. Exports increased 750,000 barrels or 7.26 per cent.
6. Total demand increased 8,092,000 barrels, or 11.71 per cent.
7. Stocks at the end of the 1928 quarter were 12,181,000 barrels, or 23.24 per cent, less than stocks at the end of the first quarter of 1927.

In producing the gasoline in March relatively less natural gasoline was used than in either January or February and production by straight distillation and cracking were increased 1 point each. March output was apportioned as follows: straight run, 58 per cent; cracking, 33 per cent, and natural gasoline, 9 per cent. The percentages for January and February were each: straight run,

Crude Oil Stocks—By Months

(Thousands of Barrels)

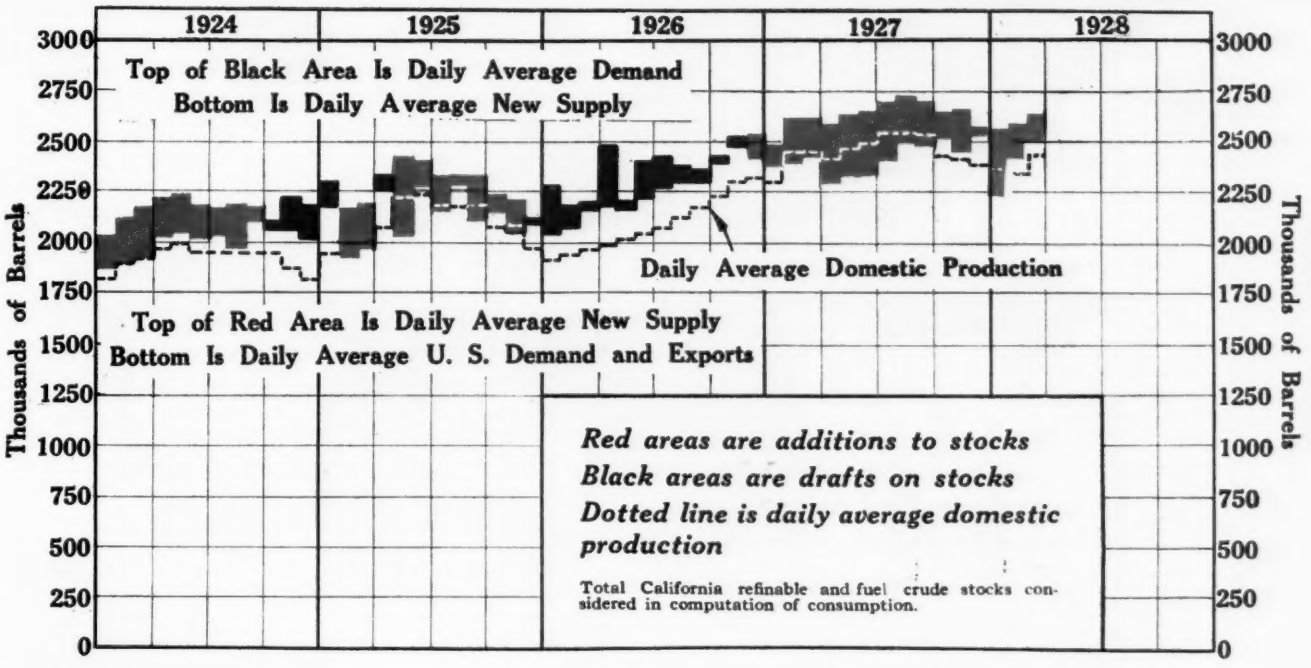
1927	East of Calif.	†In Calif.	Total U. S.
January	278,972	118,988	397,673
February	285,458	117,410	402,868
March	290,110	117,454	407,564
April	297,895	117,843	415,738
May	307,016	117,432	424,448
June	315,702	117,414	433,116
July	324,930	116,996	441,926
August	333,673	115,227	448,900
September	339,741	114,981	454,722
October	345,357	113,467	458,824
November	348,885	113,746	462,631
December	351,646	111,855	463,501
1928			
January	358,892	114,820	473,712
February	362,963	114,907	477,870
March	368,099	114,117	482,216

†Includes heavy fuels.

Daily Average Runs to Stills — All Oils — Barrels

1927	East Coast	Appala.	Ind.-Ill.	Okla.-Kans.	Texas	La.-Ark.	Rocky Mt.	Calif.	Total U. S.	1927
January	408,355	82,581	206,226	278,258	517,160	228,516	103,161	616,516	2,440,774	January
February	412,714	86,928	197,785	295,964	504,642	228,107	103,321	633,108	2,462,571	February
March	439,387	83,097	209,161	283,548	479,806	224,903	103,290	597,839	2,421,032	March
April	411,367	84,400	204,067	286,067	491,567	224,400	100,500	615,333	2,417,701	April
May	413,516	82,000	226,677	293,581	494,806	212,129	75,839	618,452	2,417,000	May
June	429,967	85,400	238,067	301,733	490,633	199,933	87,300	605,733	2,438,766	June
July	439,871	80,935	250,387	317,129	482,839	199,194	87,226	633,032	2,490,613	July
August	465,839	86,065	237,194	319,516	481,032	202,226	76,032	618,516	1,486,420	August
September	453,000	87,100	225,667	327,300	483,900	211,600	71,700	637,467	2,497,733	September
October	475,580	91,161	229,677	307,774	513,419	204,968	80,871	617,937	2,521,387	October
November	471,667	84,200	246,100	298,667	515,533	197,900	89,800	619,733	2,523,600	November
December	467,226	83,484	250,516	292,355	494,806	199,226	87,354	592,710	2,467,677	December
1928										**1928**
January	450,064	84,613	247,097	288,645	482,613	202,064	85,935	570,161	2,411,193	January
February	461,448	86,680	250,793	296,482	510,586	201,518	83,207	587,690	2,478,413	February
March	455,807	88,548	268,000	304,032	523,548	203,839	89,064	593,968	2,526,806	March

Crude Oil Production and Demand



March domestic production	2,402,100	Bbls. daily av.
March imports	220,800	Bbls. daily av.
Total new supply	2,622,900	Bbls. daily av.
March indicated demand east of California	1,802,900	Bbls. daily av.
March indicated California deliveries	642,200	Bbls. daily av.
March exports	49,400	Bbls. daily av.
Total indicated demand in March	2,494,500	Bbls. daily av.
Stock in pipe lines, and at tank farms east of California March 31, 1928	324,366,000	Bbls.
Stocks at refineries east of California	43,609,000	Bbls.
Stocks of foreign crude not at refineries	124,000	Bbls.
California stocks 20° A. P. I. and lighter	19,633,000	Bbls.
California stocks heavier than 20°	94,484,000	Bbls.
Total stocks March 31, 1928	482,216,000	Bbls.
Increase in stocks in March	3,969,000	Bbls.
Stocks March 31, 1927	407,564,000	Bbls.

57 per cent; cracking, 32 per cent, and natural gasoline, 11 per cent.

Shipments of California gasoline to eastern ports of the United States totaled 1,150,000 barrels in March. The eastern movement of California gasoline in the first quarter was 3,132,000 barrels, a gain of 676,000 barrels, or 27.52 per cent, over shipments in the first quarter of 1927.

Stocks of gasoline in California at the end of March formed 31.35 per cent of the country reserve supply of gasoline. At the end of February California stocks were 31.5 per cent of the country's total.

Natural Gasoline—Blends

Production of natural gasoline averaged less in March than in February in the districts east of California but California production was slightly larger in March. Stocks in California were stationary but east of California rose 18,000 barrels. The largest gains in stocks were in the Appalachian and Texas districts.

Output of natural gasoline-naphtha blends was slightly larger in March than in February and heavier demand lowered stocks.

Kerosene

Kerosene production in March averaged 7.74 per cent less than February production. Output was curtailed in five refining districts but was larger in the Appalachian, Indiana-Illinois, and Rocky Mountain districts. Imports fell from 11,000 to 6,000 barrels total, a figure that is insignificant in the average.

Gasoline Supply and Demand—Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	27,960,000	520,000	3,557,000	17,888,000	46,058,000
February	25,024,000	416,000	3,544,000	18,240,000	49,714,000
March	27,886,000	493,000	3,219,000	22,646,000	52,410,000
Total Three Months	80,870,000	1,429,000	10,320,000	58,774,000	52,410,000
April	26,577,000	377,000	3,614,000	23,371,000	52,379,000
May	26,787,000	490,000	4,468,000	26,579,000	48,609,000
June	26,616,000	590,000	4,248,000	27,799,000	43,768,000
July	28,118,000	190,000	3,223,000	29,784,000	39,069,000
August	28,010,000	348,000	4,193,000	29,779,000	33,455,000
September	27,716,000	515,000	3,539,000	28,409,000	29,738,000
October	28,903,000	365,000	3,959,000	25,497,000	29,550,000
November	28,558,000	417,000	3,724,000	24,400,000	30,401,000
December	28,512,000	282,000	3,154,000	23,718,000	32,323,000
1927 Total	330,667,000	5,003,000	44,442,000	297,928,000	.....
January, 1928	27,879,000	562,000	3,713,000	20,939,000	36,112,000
February	26,775,000	372,000	3,341,000	21,136,000	38,782,000
March	29,245,000	259,000	4,016,000	24,041,000	40,229,000
Total Three Months	83,899,000	1,193,000	11,070,000	66,116,000	40,229,000

Stocks of Crude Oil

Domestic Unless Otherwise Specified. Amounts in Thousands of Barrels

AT REFINERIES

Districts	Mar. 1928	*Feb. 1928	Mar. 1927
East Coast:			
Domestic	8,553	8,086	7,230
Foreign	5,058	4,233	2,206
Appalachian	2,060	1,956	1,627
Indiana, Illinois, etc.	3,015	2,904	2,561
Oklahoma, Kansas, etc.	5,759	5,888	3,841
Texas Inland	1,665	1,554	1,197
Texas Gulf Coast:			
Domestic	7,868	7,996	8,481
Foreign	383	263	257
Ark. and Inland La.	654	578	441
Louisiana Gulf Coast:			
Domestic	5,859	6,063	7,317
Foreign	1,080	1,230	889
Rocky Mountain	1,655	1,610	1,385
U. S. east of Calif.	43,609	42,361	37,432

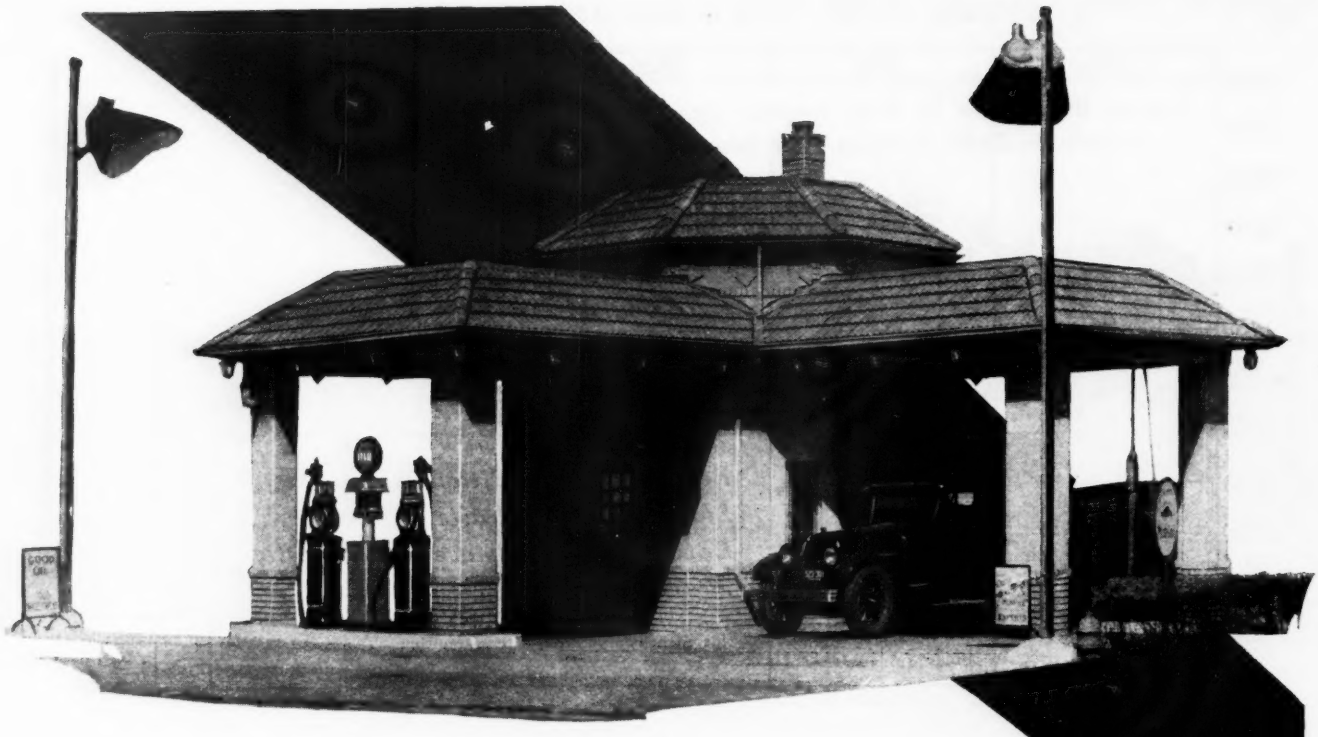
AT TANK FARMS, IN PIPE LINES AND ELSEWHERE THAN REFINERIES

Appalachian	6,181	6,240	6,424
Kentucky	1,121	1,063	1,151
Lima-Indiana	1,210	1,153	695
Ill., S. W. Indiana	12,208	12,039	11,810
Okla., Kans., Tex. except coastal	233,886	229,696	159,050
N. La.-Ark.	25,677	26,095	28,405
Gulf Coast	16,779	17,478	17,896
Rocky Mountain	27,304	27,158	26,835
East of Calif. pipe line tank farm stocks	324,366	320,922	252,266
Foreign Crude:			
Atlantic Ports	79	43	71
Gulf Ports	45	14	341
Total refinery, pipe line and tank farm stocks east of Calif.	368,099	363,340	290,110
California:			
20° and lighter	19,633	20,110	29,568
Heavier than 20°	94,484	94,797	89,796
Grand total	482,216	478,247	409,474

CLASSIFICATION BY GRAVITY

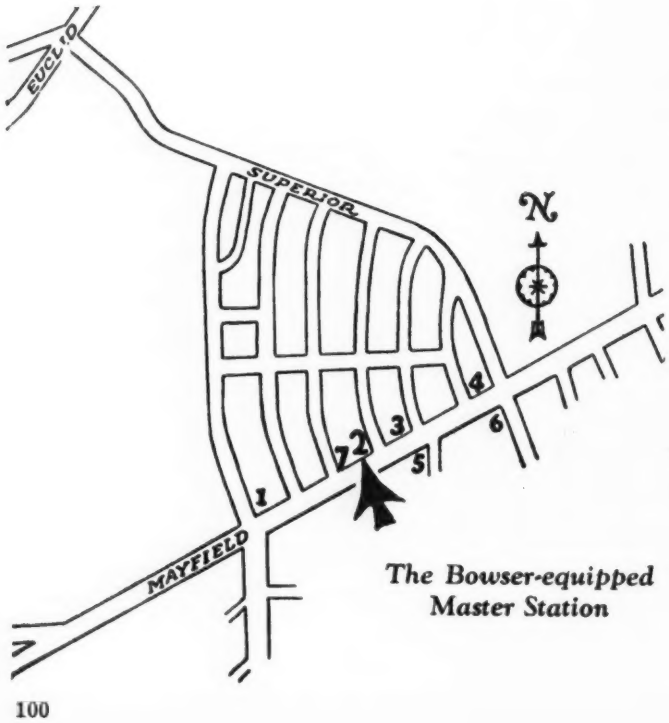
Elsewhere than refineries east of California:			
24° and lighter	317,429	312,700	244,785
Heavier than 24°	50,670	50,640	45,325

*Revised.



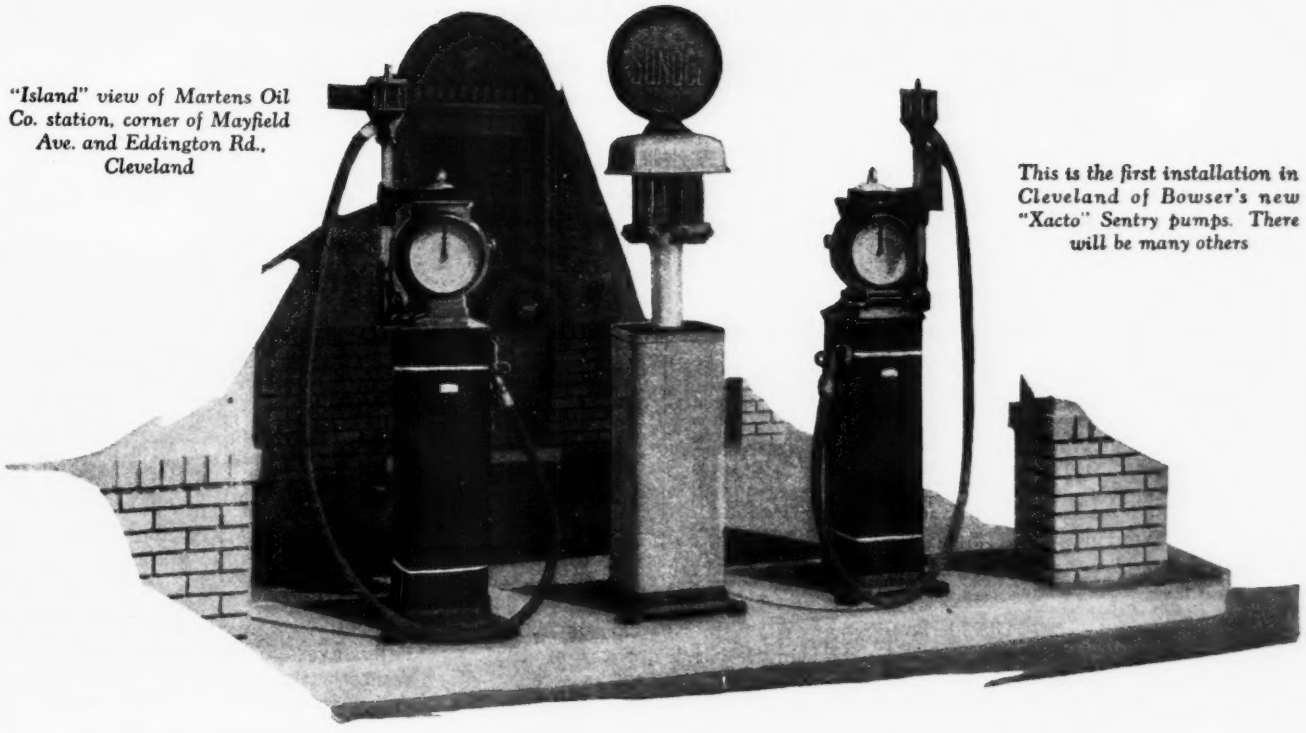
In spite of hot competition, this station gets fine start

—because it was completely Bowser-equipped



The Bowser-equipped Master Station

Observe the location—six competing stations within three blocks. Of course, this new Martens station was in a good community and on a good corner—but, even these advantages would not be enough to give it such a fine start as it has enjoyed. Sales are now running at the rate of well over 150,000 gals. a year. Oil sales are better than one quart of oil to eight gallons of gasoline—much better than the general average in other words. Read the Martens letter on the opposite page; it portrays the situation exactly as our customer sees it, in the light of his first experience with a Bowser master station layout—pump, oil fountain, floodlights, air towers, everything Bowser except the building and the men. Read the letter—then send in the coupon.



"Island" view of Martens Oil Co. station, corner of Mayfield Ave. and Eddington Rd., Cleveland

This is the first installation in Cleveland of Bowser's new "Xacto" Sentry pumps. There will be many others

And here is what Mr. Schuplinski, President of the Martens Oil Co., writes to our Mr. Browne about the station he opened on April 8th:

"You might be interested in knowing that it has been just two weeks since we installed our complete BOWSER-equipped filling station.

"In spite of the fact that we are surrounded by six other stations, all within two or three blocks of us, there is no question but what the appearance of the station has made a direct appeal to the motorists, and we have been frequently complimented on the speed at which the cars are serviced and also as to the *flood of light* at night. The *Oil Fountain,* which happens to be the second one we have purchased from you, is certainly a good booster of sales and has proven itself so in this new location. We are more than pleased with the results obtained, and especially with the decision made to buy and install *the latest Bowser equipment.*

"We were at first skeptical as to the advisability of the investment, but results have already proven that the facts which you outlined to us, were true, and we are confident that they will continue to prove out that way in the future.

"You would be surprised, in standing around, to hear the favorable comment of the motorists on *the pumps* themselves, as they have made a great hit in their neatness, speed and accuracy, and we believe they are responsible for the motorists becoming more confident in obtaining accurate measure."

You are invited to ask for the complete story of the Bowser master station—a layout that builds volume and profits at the same time. Good-looking equipment. Fast-service equipment. Floodlights that "turn night into day" and make service fast—and easy. Air towers. Trade-bringers and confidence-builders. Use the coupon.

S. F. BOWSER & Co., Inc.
1302 Creighton Avenue
FORT WAYNE, INDIANA

S. F. BOWSER & CO., Inc.
1302 Creighton Ave., Fort Wayne, Ind.
Show me how a Bowser master station layout will increase my profits. I want to know.

Name .....

Address .....

Gasoline Situation by Districts — Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Change %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Change %	Stocks March 1928	Stocks February 1928	Stocks March 1927	Districts
East Coast	133,806	139,138	— 3.98	108,806	114,552	— 5.28	7,101,000	6,326,000	10,711,000	East Coast
Appalachian	38,967	39,310	— 0.87	39,742	34,414	+15.48	1,352,000	1,376,000	1,378,000	Appalachian
Ind., Ill., etc.	130,323	127,586	+ 2.14	119,355	104,896	+13.78	5,617,000	5,277,000	5,969,000	Ind., Ill., etc.
Okla., Kans., etc.	153,451	144,310	+ 6.34	153,258	125,448	+22.17	4,060,000	4,054,000	4,339,000	Okla., Kans., etc.
Texas	210,323	200,310	+ 4.50	209,419	184,931	+13.24	5,648,000	5,620,000	7,107,000	Texas
Louisiana and Ark.	67,710	66,621	+ 1.63	69,097	71,345	— 3.15	1,725,000	1,768,000	4,141,000	Louisiana and Ark.
Rocky Mountain	41,904	36,517	+14.75	42,838	32,793	+30.63	2,114,000	2,143,000	5,031,000	Rocky Mountain
California	166,903	169,483	— 1.52	154,193	162,827	— 5.30	12,612,000	12,218,000	13,534,000	California
U. S. Total	943,387	923,275	+ 2.18	896,708	831,206	+ 7.88	40,229,000	38,782,000	52,410,000	U. S. Total
Texas Gulf Coast	152,968	160,138	— 4.69	168,258	147,069	+14.41	4,742,000	4,778,000	6,249,000	Texas Gulf Coast
La. Gulf Coast	52,161	51,793	+ 0.71	52,871	56,862	— 7.02	1,617,000	1,660,000	4,010,000	La. Gulf Coast

Natural Gasoline and Motor Blends — Barrels

Districts	Daily Avg. Production Mar. (net)	Daily Avg. Production Feb. (net)	Stocks End of March	Stocks End of February	Motor Fuel Blends Made in Mar.	Motor Fuel Blends Made in Feb.	Stocks of Blends End of Mar.	Stocks of Blends End of Feb.	Districts
Appalachian	7,757	8,456	114,000	91,100	6,900	5,500	6,047	6,238	Appalachian
Ind., Ill., etc.	1,075	1,067	10,200	10,200	1,428	1,405	595	405	Ind., Ill., etc.
Okla., Kans., etc.	40,476	42,364	398,500	416,900	108,000	111,360	13,333	14,905	Okla., Kans., etc.
Texas	20,737	21,018	234,000	214,400	20,905	19,214	3,238	3,523	Texas
Louisiana and Ark.	5,530	5,583	40,500	46,300	16,762	11,643	1,976	1,738	Louisiana and Ark.
Rocky Mountain	2,918	2,791	11,400	11,700	.....	.....	2,000	3,071	Rocky Mountain
Total east of Calif.	78,493	81,279	808,600	790,600	153,995	149,122	27,189	29,880	Total east of Calif.
California	32,027	31,773	33,200	33,200	.....	.....	.....	47	California
U. S. Total	110,520	113,052	841,800	823,800	.....	.....	.....	29,927	U. S. Total

Domestic demand fell 23,000 barrels daily average to 88,000 barrels daily average. Exports rose 6000 barrels daily average to 60,000 barrels average. Total shipments from refineries were 9.95 per cent less than February shipments but stocks rose only 134,000 barrels to 7,826,000 barrels.

Stocks of kerosene March 31 were 927,000 barrels or 10.59 per cent less than stocks March 31, 1927. March 31, 1928, stocks were 52.8 days' supply at the March rate of demand. Stocks March 31, 1927, were 57.5 days' supply at rate of demand then current.

Average production in the first quarter of 1928 was 160,000 barrels daily, the same as in the first quarter of 1927. Exports average 63,000 barrels daily in the first quarter of this year and only 49,000 barrels in the first quarter of 1927. Domestic shipments at 96,000 barrels daily this year were 13,000 barrels daily less than in the first quarter of 1927.

Lubricating Oils

Average production of lubricating oils in March was less than 400 barrels or 0.39 per cent less than in February. Exports fell 2000 barrels daily average to 27,000 barrels but domestic demand rose 11,000 barrels daily average to 63,000. Stocks of lubes increased 80,000 barrels.

Stocks of lubes March 31 were 8,412,000 barrels, 377,000 barrels or

Kerosene Supply and Demand—Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	5,113,000	.....	1,616,000	3,882,000	8,190,000
February	4,453,000	1,000	1,399,000	2,590,000	8,655,000
March	4,802,000	3,000	1,351,000	3,356,000	8,753,000
Total Three Months	14,368,000	4,000	4,366,000	9,828,000	26,673,000
April	4,608,000	1,000	1,861,000	2,776,000	8,725,000
May	4,663,000	1,000	1,633,000	3,188,000	8,568,000
June	4,308,000	2,000	1,616,000	2,695,000	8,567,000
July	4,484,000	.....	1,376,000	2,637,000	9,038,000
August	4,420,000	4,000	1,700,000	3,389,000	8,373,000
September	4,686,000	.....	1,659,000	3,280,000	8,120,000
October	4,884,000	1,000	2,211,000	3,469,000	7,325,000
November	4,824,000	27,000	1,821,000	2,514,000	7,841,000
December	4,869,000	15,000	1,237,000	3,819,000	7,669,000
1927 Total	56,114,000	55,000	19,480,000	37,595	.....
January, 1928	5,047,000	46,000	2,350,000	2,742,000	7,670,000
February	4,783,000	11,000	1,551,000	3,221,000	7,692,000
March	4,717,000	6,000	1,852,000	2,737,000	7,826,000
Total Three Months	14,547,000	63,000,000	5,753,000	8,700,000	23,188,000

Kerosene Situation by Districts — Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Change %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Change %	Stocks March 1928	Stocks February 1928	Stocks March 1927	Districts
East Coast	21,742	26,828	—18.96	18,032	26,345	—31.55	1,592,000	1,477,000	1,705,000	East Coast
Appalachian	9,290	9,070	+ 2.43	9,484	9,621	— 1.42	285,000	291,000	292,000	Appalachian
Ind., Ill., etc.	16,484	15,207	+ 8.40	17,806	15,655	+13.74	876,000	917,000	863,000	Ind., Ill., etc.
Okla., Kans., etc.	26,871	26,930	— 0.22	32,161	27,276	+17.91	525,000	689,000	585,000	Okla., Kans., etc.
Texas	36,322	43,103	—15.73	32,322	37,724	—14.32	1,493,000	1,369,000	1,805,000	Texas
Louisiana and Ark.	15,322	15,896	— 3.61	12,484	17,345	—28.02	1,112,000	1,024,000	1,244,000	Louisiana and Ark.
Rocky Mountain	4,968	3,690	+34.63	7,064	4,793	+47.38	314,000	379,000	406,000	Rocky Mountain
California	21,161	24,207	—14.39	18,484	25,414	—27.27	1,629,000	1,546,000	1,853,000	California
U. S. Total	152,160	164,931	— 7.74	147,837	164,173	— 9.95	7,826,000	7,692,000	8,753,000	U. S. Total
Texas Gulf Coast	28,419	35,965	—20.98	24,193	31,276	—22.65	1,399,000	1,268,000	1,345,000	Texas Gulf Coast
La. Gulf Coast	13,806	14,103	— 2.10	10,806	15,655	—30.97	1,099,000	1,006,000	1,198,000	La. Gulf Coast

Lubricants Situation by Districts — Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Change %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Change %	Stocks March 1928	Stocks February 1928	Stocks March 1927	Districts
East Coast	29,968	31,586	— 5.12	26,903	23,207	+15.92	3,043,000	2,948,000	2,717,000	East Coast
Appalachian	13,387	12,310	+ 8.75	14,129	12,241	+15.42	1,066,000	1,089,000	1,018,000	Appalachian
Ind., Ill., etc.	11,064	10,241	+ 8.04	11,839	9,207	+28.59	914,000	938,000	753,000	Ind., Ill., etc.
Okla., Kans., etc.	7,097	6,896	+ 2.91	7,452	5,241	+42.19	565,000	576,000	475,000	Okla., Kans., etc.
Texas	21,580	23,448	— 7.96	17,935	25,207	—28.85	1,743,000	1,630,000	1,921,000	Texas
Louisiana and Ark.	968	1,586	—38.96	1,322	1,448	— 8.70	119,000	130,000	125,000	Louisiana and Ark.
Rocky Mountain	1,935	1,827	+ 5.91	2,355	1,483	+58.80	139,000	152,000	136,000	Rocky Mountain
California	7,710	6,172	+24.92	9,194	3,827	+140.24	823,000	869,000	890,000	California
U. S. Total	93,709	94,066	— 0.39	91,129	81,861	+11.32	8,412,000	8,332,000	8,035,000	U. S. Total
Texas Gulf Coast	20,645	22,483	— 8.18	17,097	24,241	—29.47	1,675,000	1,565,000	1,878,000	Texas Gulf Coast
La. Gulf Coast	968	1,586	—38.96	1,322	1,379	— 4.13	119,000	130,000	125,000	La. Gulf Coast

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)	
January, 1927	92,914	287,394	191,180	215,337	511,000	1,189,000	2,473,000	39,287,000	2,367,000	January, 1927
February	88,102	294,682	172,685	234,450	546,000	1,282,000	2,729,000	38,986,000	2,091,000	February
March	98,163	325,521	222,309	235,251	525,000	1,356,000	2,412,000	39,392,000	2,369,000	March
April	88,404	318,529	273,767	219,502	561,000	1,410,000	1,978,000	38,095,000	2,237,000	April
May	87,900	329,400	319,000	222,500	599,000	1,368,000	1,809,000	37,760,000	2,599,000	May
June	95,300	293,100	347,100	232,400	677,000	1,180,000	2,283,000	38,192,000	2,487,000	June
July	90,400	305,800	334,700	214,100	747,000	928,000	2,490,000	39,647,000	2,516,000	July
August	94,800	303,600	339,500	192,200	743,000	879,000	1,955,000	38,711,000	2,598,000	August
September	97,500	313,500	333,100	176,300	634,000	863,000	1,811,000	36,962,000	2,453,000	September
October	101,600	331,300	332,600	189,400	663,000	960,000	1,977,000	35,874,000	2,405,000	October
November	102,300	349,200	290,000	196,200	606,000	1,120,000	2,121,000	35,209,000	2,145,000	November
December	107,800	345,100	262,600	220,800	593,000	1,221,000	2,435,000	35,314,000	2,062,000	December
1927 Total	1,145,183	.....	3,418,541	.....	7,405,000	.....	26,473,000	.....	28,329,000	1927 Total
January, 1928	103,000	330,400	198,900	209,300	613,000	1,176,000	2,297,000	35,777,000	2,128,000	January, 1928
February	100,000	337,000	208,500	230,300	635,000	1,297,000	2,201,000	35,972,000	1,969,000	February
March	107,200	352,400	270,000	268,700	661,000	1,527,000	2,247,000	35,545,000	2,258,000	March

4.69 per cent more than stocks March 31, 1927. The March 31 stocks at the March rate of foreign and domestic demand were 92.4 days' supply compared with 100.4 days' supply at the end of March, 1927.

Production of lubricants in the first three months of 1928 averaged 91,000 barrels daily, compared with 85,000 barrels daily in the first three months of last year. Exports averaged 29,000 barrels daily in the first quarter this year and 26,000 daily in the first quarter of last year. Domestic demand was 2000 barrels daily average more this year, standing at 56,000 barrels daily for the quarter.

Gas and Fuel Oils

Daily average production of gas and fuel oils was increased 3 per cent in March over February production. Output was increased in five refining districts and decreased in three.

Imports of gas and fuel oils averaged more than February imports. Exports were 10,000 barrels daily average more. No statistics on domestic consumption are available because of the lumping together of the figures for heavy crude oil and fuel oil in California.

In the first quarter of 1928 gas and fuel oil output was only slightly more than production in the first quarter of 1927. Imports were a little less this year and exports slightly more. Including heavy California crude oil, stocks of fuel oil March 31 were 11,000,000 barrels larger March 31 than a year before.

East of California gas and fuel oil stocks were lower March 31 than stocks Feb. 29, 1928, and March 31, 1927, at only the East Coast plants.

Paraffin Wax

Wax stocks were lowered almost 30,000,000 pounds to 136,465,000 pounds in March. The stocks March 31 were the smallest since April 30, 1926, when stocks stood at 136,084,000 pounds.

Average production of wax was slightly less than February average production, being 1,620,000 pounds daily, compared with 1,692,000 pounds daily in February. Imports averaged 57,000 pounds daily in March and 46,000 daily in February. Exports averaged 1,295,000 pounds daily in March and 1,312,000 in February.

Domestic demand more than dou-

Lubricating Oil Supply and Demand—Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	2,570,000	1,000	864,000	1,496,000	7,867,000
February	2,345,000	.....	620,000	1,231,000	8,361,000
March	2,754,000	†1,000	895,000	2,334,000	8,035,000
Total Three Months	7,669,000	2,000	2,379,000	5,061,000	8,035,000
April	2,615,000	1,000	763,000	1,712,000	8,176,000
May	2,625,000	1,000	863,000	1,928,000	8,011,000
June	2,571,000	1,000	758,000	2,197,000	7,628,000
July	2,672,000	.....	993,000	1,811,000	7,496,000
August	2,752,000	1,000	754,000	2,004,000	7,491,000
September	2,782,000	.....	861,000	1,965,000	7,447,000
October	2,757,000	1,000	839,000	1,782,000	7,584,000
November	2,477,000	.....	798,000	1,739,000	7,524,000
December	2,801,000	.....	802,000	1,663,000	7,860,000
1927 Total	31,721,000	7,000	9,810,000	21,634,000	.....
January, 1928	2,658,000	.....	934,000	1,606,000	7,978,000
February	2,728,000	.....	841,000	1,533,000	8,332,000
March	2,905,000	.....	837,000	1,988,000	8,412,000
Total Three Months	8,291,000	.....	2,612,000	5,127,000	8,412,000

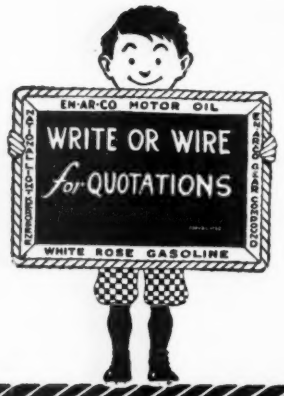
Gas and Fuel Oil Supply and Demand—Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	32,936,000	660,000	3,732,000	.....	*23,195,000
February	30,185,000	1,053,000	3,812,000	.....	*22,099,000
March	32,377,000	525,000	3,657,000	.....	*22,561,000
Total Three Months	95,498,000	2,238,000	11,201,000	.....	*22,561,000
April	31,856,000	805,000	3,325,000	.....	*23,732,000
May	33,499,000	826,000	4,544,000	.....	*26,059,000
June	31,691,000	851,000	4,278,000	.....	*26,590,000
July	33,693,000	849,000	4,047,000	.....	*28,890,000
August	34,098,000	391,000	4,639,000	.....	*30,346,000
September	32,339,000	341,000	3,258,000	.....	*31,631,000
October	34,045,000	667,000	4,206,000	.....	*33,191,000
November	32,594,000	704,000	4,013,000	.....	*33,637,000
December	33,029,000	451,000	3,828,000	.....	*31,982,000
1927 Total	392,342,000	8,123,000	47,339,000	.....	.....
January, 1928	32,271,000	553,000	4,175,000	.....	*29,623,000
February	30,944,000	666,000	3,420,000	.....	*29,011,000
March	34,071,000	848,000	3,969,000	.....	*29,170,000
Total Three Months	97,286,000	2,067,000	11,564,000	.....	*29,170,000

*These stocks for east of California only.

Gas and Fuel Situation by Districts — Barrels

Districts	March Daily Avg. Output	February Daily Avg. Output	March Change %	March Daily Avg. Shipments	February Daily Avg. Shipments	March Change %	Stocks March 1928	Stocks February 1928	Stocks March 1927	Districts
East Coast	224,742	232,310	— 3.26	239,968	255,655	— 6.13	9,414,000	9,886,000	5,951,000	East Coast
Appalachian	18,742	17,103	+ 9.58	16,290	23,310	—30.11	929,000	853,000	797,000	Appalachian
Ind., Ill., etc.	84,451	71,483	+18.14	78,677	77,379	+ 1.68	1,222,000	1,043,000	862,000	Ind., Ill., etc.
Okla., Kans., etc.	95,677	97,448	— 1.82	94,968	100,586	— 5.58	4,448,000	4,426,000	4,419,000	Okla., Kans., etc.
Texas	208,451	198,931	+ 4.79	208,129	194,552	+ 6.98	7,809,000	7,799,000	7,436,000	Texas
Louisiana and Ark.	79,258	81,552	— 2.89	69,516	70,310	— 1.13	4,567,000	4,265,000	2,507,000	Louisiana and Ark
Rocky Mountain	20,387	19,862	+ 2.64	19,032	18,000	+ 5.73	781,000	739,000	589,000	Rocky Mountain
California	367,355	348,346	+ 5.46	.....	.....	.....	.....	.....	.....	California
U. S. Total	1,099,064	1,067,035	+ 3.00	1,093,935	1,088,137	+ 0.53	29,170,000	29,011,000	22,561,000	U. S. Total
Texas Gulf Coast	155,032	149,931	+ 3.40	154,484	145,275	+ 6.34	6,255,000	6,238,000	6,266,000	Texas Gulf Coast
La. Gulf Coast	42,387	45,862	— 7.58	31,710	35,896	—11.66	3,955,000	3,624,000	1,905,000	La. Gulf Coast



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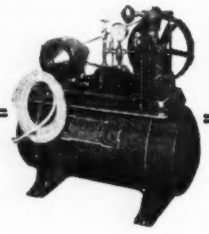


Paraffin Wax Supply and Demand—Pounds

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	54,114,000	460,000	29,228,000	17,842,000	192,835,000
February	47,363,000	2,048,000	23,623,000	20,171,000	198,452,000
March	53,644,000	910,000	28,205,000	23,461,000	201,340,000
Total Three Months	155,121,000	3,418,000	81,056,000	61,474,000	201,340,000
April	48,917,000	1,505,000	25,421,000	15,322,000	211,019,000
May	46,267,000	729,000	25,228,000	25,458,000	207,329,000
June	44,938,000	400,000	24,200,000	29,659,000	198,808,000
July	47,979,000	2,789,000	25,970,000	32,105,000	191,501,000
August	41,576,000	2,656,000	34,229,000	20,859,000	180,645,000
September	47,888,000	3,040,000	31,780,000	29,621,000	170,172,000
October	49,476,000	887,000	28,342,000	21,826,000	170,367,000
November	48,146,000	3,132,000	32,541,000	17,404,000	171,700,000
December	54,039,000	1,906,000	30,569,000	29,862,000	167,214,000
1927 Total	584,347,000	20,462,000	339,336,000	283,590,000	.....
January, 1928	55,320,000	1,117,000	39,712,000	15,039,000	168,900,000
February	49,068,000	1,337,000	38,036,000	15,025,000	166,244,000
March	50,207,000	1,767,000	40,147,000	41,606,000	136,465,000
Total Three Months	154,595,000	4,221,000	117,895,000	70,211,000	136,465,000

bled in March, averaging 1,342,000 pounds as against 518,000 pounds daily average in February.

Production in the first quarter was slightly less than in the first quarter of 1927, but imports, exports and domestic demand was more this year than last.

High Rate of Auto Output Expected to Continue

NEW YORK, May 5.—Automotive Industries last week said:

Though capacity operation has been the rule in nearly every automotive plant during April, the end of the month will find many factories carrying over orders into May, which, added to the already large May schedules, will make certain that production will continue at high levels. There is every indication now that the second quarter this year will rank with the industry's best production periods.

Retail conditions have shown constant improvement through April, particularly in the southeastern section of the country, where lower priced cars have had a much improved market.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

30614—**Paraffin wax and scale, petrolatum, mineral pitch, gasoline, lubricating oils,** and white mineral oils, Liverpool, England, agency.

30728.—**Lubricating oils,** Sao Paulo, Brazil, agency.

30772.—**Motor oils and greases,** Rosario, Argentina, agency and purchase.

30914.—**Cylinder oil for locomotives,** Bucharest, Rumania, purchase.

30915—**High grade gasoline in carload lots,** Quebec, Canada, purchase and agency.

Accident Prevention Work To Be Carried On

TULSA, May 5.—The Mid-Continent Oil & Gas Association has decided to continue the work of the Safety Division under the direction of D. J. Wallace after an extended study of the situation. A larger appropriation has been made for the safety work, despite the depressed condition of the industry.

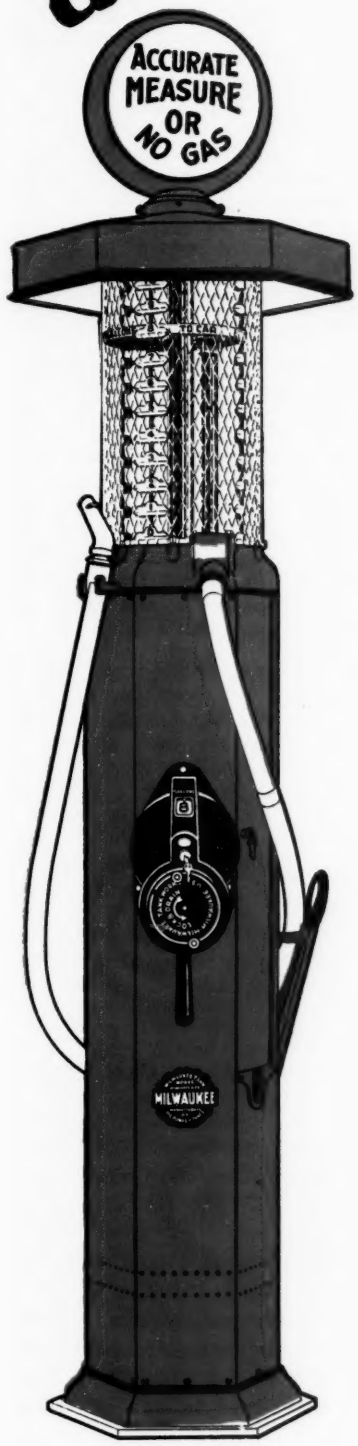
The special committee of the association composed of James A. Veasey, counsel for the Carter Oil Co.; P. M. Miskell, vice president of the Empire Oil & Refining Co.; and Roy B. Jones, president of the Panhandle Producing & Refining Co., found that 85 per cent of the members of the Mid-Continent Oil & Gas Association do not maintain safety organizations in their own companies. Only about a dozen companies have special safety men fostering definite programs to educate employees.

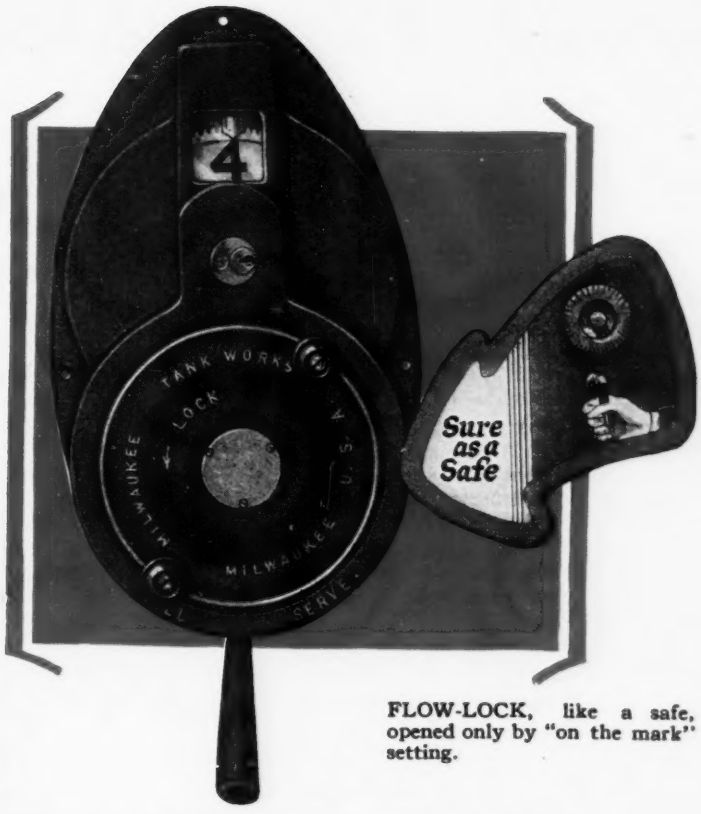
The committee recommended that foremen's meetings be held quarterly in every district in the Mid-Continent this year if possible and that more safety motion pictures be prepared and exhibited than in the past. The committee suggested that the safety division should be aggressive in selling the executives of oil companies on the desirability of co-operating in the association program and offer to aid in solving particular safety problems.

It was reported that the association work will supplement rather than duplicate the work of the individual companies but that even if it should be a duplication the program would be desirable since such a large percentage of the companies have no safety departments.

The committee found that in accident prevention the education of employees is 75 per cent effective as compared with a 25 per cent effectiveness for mechanical safeguards. With the large turnover in oil field labor, the committee found that constant education is necessary.

What is "compelled accuracy"?





FLOW-LOCK, like a safe, opened only by "on the mark" setting.

1. No pump that serves gasoline, if the Sliding Indicator is only slightly off the mark, is compulsory-accurate.
2. A pump that will NOT serve gasoline UNLESS the Sliding Indicator is exactly ON the mark IS compulsory-accurate.

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FLOW-LOCK Visibles (Hand or Motor Driven) prevent station losses, relieve attendants from unjust accusations, and in the experience of one oil company having over 700 of them installed, carry a *lower upkeep cost* than any pump that company ever used.

They cost no more than plain pumps or imitations.

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Slush Pits Standardized To Depth of Hole

TULSA, May 3

IT WAS not until about a year ago that any attempt was made to standardize the size of rotary slush pits according to the depth of the hole. The design was left to each contractor, who in turn left it to the individual preference of his drillers.

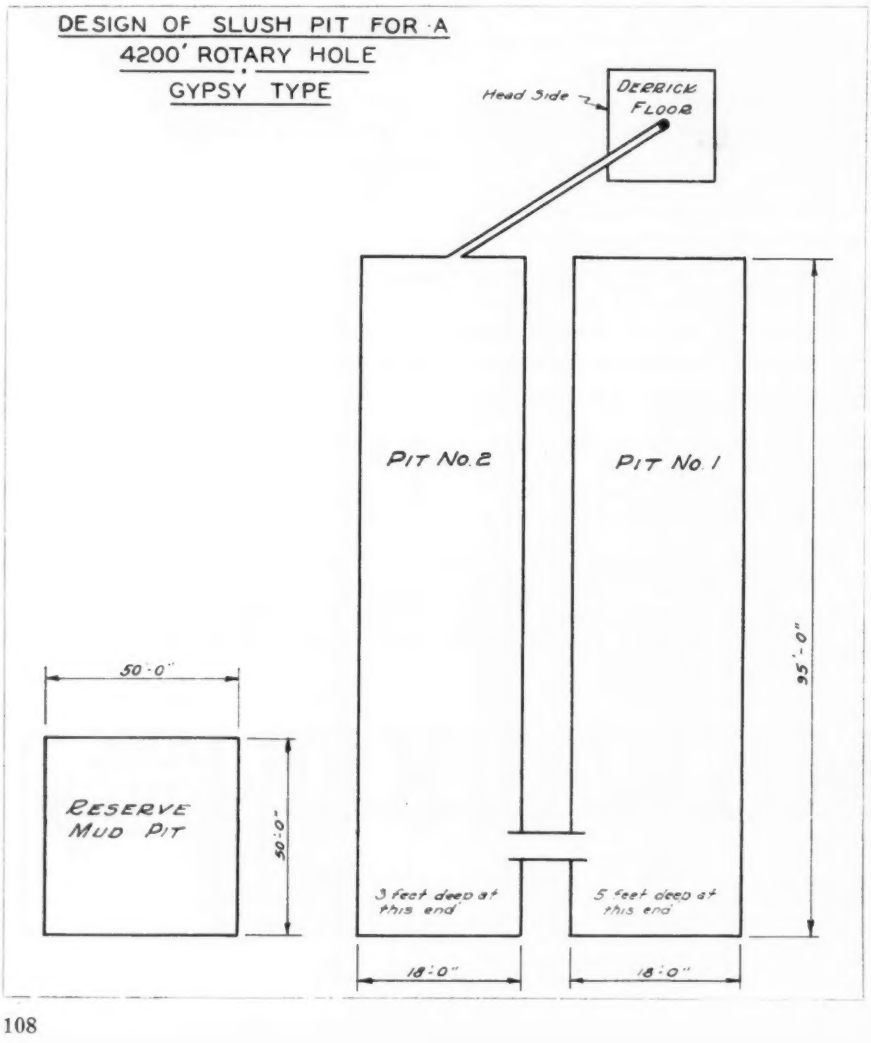
Each driller had his own notions as to the proper thickness of drilling mud, and ordered his slush pit accordingly. No attempt was made to calculate the amount of earth which would be excavated during the drilling, and the size and location of the pits varied with each hole.

Tests and calculations made by Hollis P. Porter, chief engineer of the Gypsy Oil Co., showed that the most practical formula for determining the size of the pits for rotary drilling was that the volume of the pits should equal nine times the number of cubic feet of contents of the hole. That is, V=9C. A standard depth of five feet was determined upon. On cable tool holes the formula was arrived at in the same way, save that 1.5 times the cubic contents of the hole to be drilled was found to be sufficient.

The most important change in the pits was in their position with reference to the hole. Instead of being parallel to the derrick floor, they are placed at right angles to it. The center line of the No. 1 pit is on a direct line with the hole.

This arrangement of the pits gives the mud a much greater distance to travel, thereby allowing it to settle, does away to a great extent with the necessity of baffles, and should prevent having the pits running over, as they will be of sufficient size to handle all the fluid required.

The pits may be arranged with reference to one another in any way that existing conditions dictate, so long as No. 1 is opposite the hole. The reserve pit should have a capacity 15 per cent greater than the combined capacity of the regular slush pits.



Separate Well Gauge Easily And Cheaply Obtained

A hook up for gauging producing wells individually is not an expensive or complicated arrangement. A few connections of a type generally found in the store house of any lease and sufficient tankage to spare a tank for a 24-hour period is all that is required.

The lead line is brought to the gun barrel tank in the usual manner. A tee is put on "running", made up so that the side opening is straight up. Into the side opening goes a nipple, and onto the nipple goes a stop cock. The line is then carried from the nipple to the gun barrel in the usual way.

Into the running end of the tee make up a nipple and put on another stop cock. Into the stop goes a piece long enough for the end to clear the gun barrel. At the end of the piece an ell, and into the ell, the mouth of which is turned toward the manhole on top of the tank goes a joint of pipe, the other end of which feeds into the tank.

The tank should be bled to remove as much water and B. S. as possible, and a gauge taken. By closing the stop on the line from the tee at the end of the lead line to the gun barrel and opening the other the well can be pumped into the tank. By reversing the stops the well will put its production into the gun barrel. The joint may be unscrewed from the ell in the end of the line and made up in any other lead line.

At the end of the 24-hour period, after the well has been turned back into the gun barrel, a gauge should be taken. Then the tank should be bled for water, another gauge taken, and then bled again for B. S. and gauged. In this way it is easy to tell just what a well is doing, how much oil and water it is making and whether or not it is cutting. This information is vital if the operator is going to know just which wells are making him money and which are being pumped for sake of appearance.

Ethyl Gasoline Earns First Profit

CLEVELAND, May 5.—General Motors Corp. in its annual report said the Ethyl Gasoline Corp. earned a profit in 1927 for the first time. The amount was not given. The Ethyl corporation is owned half and half by Standard Oil Co. of New Jersey and General Motors. Ethyl gasoline is now on sale in almost all parts of the United States and Canada and in several foreign countries, the company reported.

Methods for Handling Pipe In Deep Holes

DEEP drilling, bringing with it the handling of long strings of casing, has greatly improved the efficiency with which these strings are landed and cemented. So says J. B. Case, chief deputy supervisor, Department of Petroleum and Gas of the State of California, writing in the Summary of Operations in California Oil Fields, published by the Division of Mines and Mining.

Mr. Case goes on to say there is still room for much improvement, and he expresses the hope that the American Petroleum Institute, or some similar organization which has funds available for research work, will aid materially in the conservation of oil and gas by a study of oil field cementing practice.

The article deals at length with modern methods of landing and cementing long water strings in deep holes. Four salient features in connection with landing such strings of pipe are given. First, all measurements should be as accurate as possible to insure that the casing shoe will be set in a formation suitable for impervious bonding. Second, the bonding material, cement, should be in place behind and completely surrounding the casing. Third, equilibrium of pressure should be established in the hole, so that the cement will not be disturbed by any fluid action in the hole, or by movement of the cement itself during the period of setting. Fourth, sufficient time should be allowed for the cement to harden and cure before submitting it to any strains which might ruin what would otherwise be a perfect water shut-off.

The formula $D^2=2d^2$, where D is the diameter of the hole and d the inside diameter of the casing, gives the maximum size hole which should be drilled for a given size casing to insure a greater upward velocity of the fluid column outside the casing. By applying this formula, Mr. Case arrives at the following diameters for the hole: When planning to run 12½-inch casing the maximum diameter is 17.66 inches; for 11-inch casing, 15.55 inches; for 10-inch casing 14 inches; for 8¼-inch casing, 11.66 inches; for 6¼-inch casing 8.85 inches is the maximum diameter of the hole which should be drilled.

In deep holes, where especially long strings of pipe are to be landed, the greatest care should be taken that the rig is in good shape, that the casing lines, block and the sheaves are not worn and that no dented or imperfect joints are run.

Mr. Case says that it is the practice of some operators to center the casing shoe in the hole to insure a continuous wall of cement around the casing at the shoe. This is accomplished by wooden rings on the outside of the bottom two or three joints of the string.

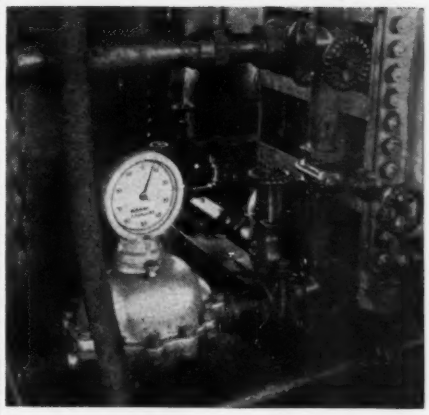
When floating the casing in the float valves prevent the entry of fluid into the casing from the bottom. When such is the case the fluid must be put into the casing from the top as it is lowered into the hole. The amount of fluid to put into the pipe, depending on its size and collapsing strength, must at no time fall below a point where it would allow the casing to collapse when it is submerged in fluid. With 11-inch, 60-pound casing the fluid is kept within about 1500 feet of the surface, while with 8⅝-inch it is kept at about 2000 feet from the surface. Fluid will pass from the inside of the casing out through the float valve at the bottom when the internal pressure becomes greater than the external pressure.

Mr. Case says that the greatest care should be taken that all cementing equipment is in good shape and is sufficient to insure a continuous flow of cement slurry going into the hole once the operation has started. This is effected by having the necessary amount of fluid available to force the cement out of the pipe against the external pressure of the fluid in the hole. The danger of channeling, which prevents a perfect shut off, is thus overcome. In cases of extreme high pressure to be overcome the use of a heavy mineral, such as hematite or barite, to establish and keep circulation is advocated by Mr. Case.

California Gasoline Men Coming in Special Car

TULSA, May 3.—California members of the Natural Gasoline Association have chartered a special car for their trip to Tulsa to attend the annual convention at the Mayo Hotel May 22 to 24.

George L. Ratcliffe, manager of the gas department of the General Petroleum Corp. and a vice president of the association, has led in recruiting the California delegation. It will leave over the Southern Pacific May 18. The car will stop about seven or eight hours at El Paso, be hooked on the Texas & Pacific train for Fort Worth and will make the final lap of the journey over the M. K. & T., arriving in Tulsa at 10:45 p.m. May 20.



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New Patents

April 17, 1928

MISCELLANEOUS

Apparatus for Extracting Oil from Shale—Richard Crawshaw, Drumright, Okla. Filed Feb. 5, 1927. No. 1,666,488.

Oil Tank—Joseph N. Pew, Jr., Ardmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa. Filed June 8, 1926. No. 1,666,666.

Oil Tank—Joseph N. Pew, Jr. Ardmore Pa. assignor to Sun Oil Company, Philadelphia, Po. Filed June 8, 1926. No. 1,666,667.

Composition to be Used in Connection with Antiknock Compounds—Wilhelm Gaus, Ludwigshafen-on-the-Rhine, Germany, assignor to I. G. Farbenindustrie, Aktiengesellschaft, Frankfort-on-the-Rhine, Germany. Filed April 17, 1925. No. 1,666,693.

Method of Packing Asphalt—Fred Breeze, Jr., Wyoming, Ohio, assignor to the Flintkote Company, Boston, Mass. Filed April 5, 1923. No. 1,666,730.

April 24, 1928

REFINING

Pressure Stills—Alfred James Sloan, Kansas City, Kans., assignor to Sinclair Refining Company, Chicago, Ill. Filed Sept. 15, 1923. No. 1,667,055.

Condensation Product from Olefins and Hydrocarbons of the Naphthalene Series and Process of Making the Same—Richard Michel, Uerdingen-on-the-Rhine, Germany, assignor to I. G. Farbenindustrie Aktiengesellschaft, Frankfort-on-the-Rhine, Germany. Filed June 21, 1927. No. 1,667,214.

Apparatus for Mixing Sludge—Robert Beattie, Fort Worth, Tex., assignor to Texas Pacific Coal and Oil Company, Fort Worth, Tex. Filed June 6, 1927. No. 1,667,235.

Process of Fractionating Oils—Clive M. Alexander, Tulsa, Okla. Filed Jan. 12, 1926. No. 1,667,340.

Conversion of Lead Sludge—Joseph Bennett Hill, Philadelphia, Pa., assignor to The Atlantic Refining Company, Philadelphia, Pa. Filed July 16, 1927. No. 1,667,550.

PRODUCTION

Drilling Bit—Zalmon B. Higdon, Ponca City, Okla. Filed March 18, 1927. No. 1,667,155.

Rotary Underreamer—Stewart L. Campbell, Berkeley, Calif., assignor to John Grant, Los Angeles, Calif. Filed Feb. 1, 1926. No. 1,667,190.

Oil-Mining Method and Apparatus—Leo Ranney, New York, N. Y., assignor to Standard Oil Development Corporation. Filed June 18, 1926. No. 1,667,269.

Oil-Well Pump—William David Ogletree, Mexia, Tex., assignor to John A. Fain, Oklahoma City, Okla. Filed Oct. 11, 1922. No. 1,667,433.

NATURAL GAS

Gas-Treating Process—Cornelis Lourens, Netherlands, assignor to General Norit Company, Limited, Amsterdam, Netherlands. Filed Nov. 11, 1922. No. 1,667,426.

MISCELLANEOUS

Combination Pressure-Vacuum Valve and Thief Hatch—Harry Hammond Howell, Kansas City, Mo., assignor to W. H. Elliott, Tulsa, Okla. Filed Aug. 9, 1926. No. 1,666,935.

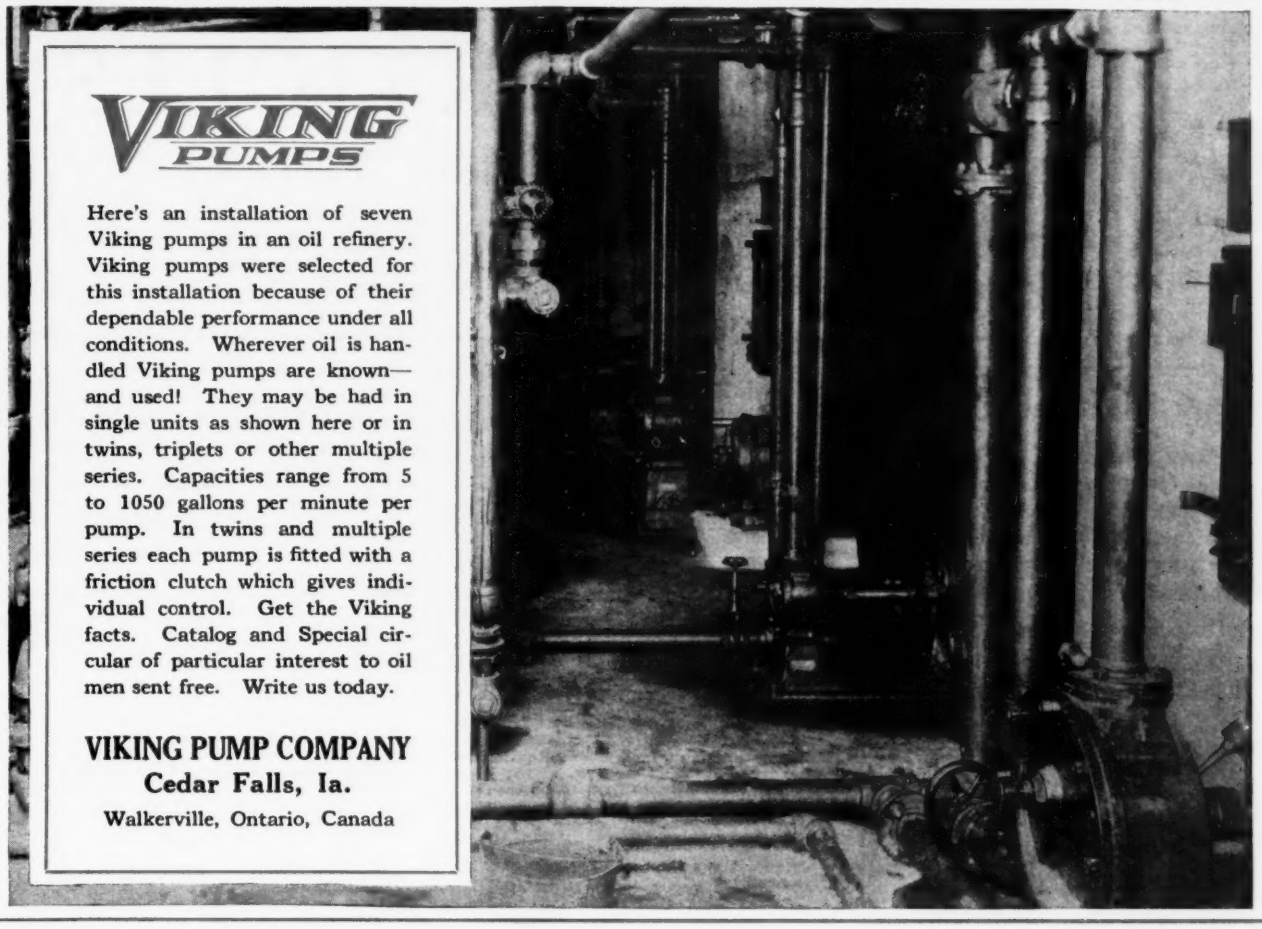
Gasoline Substitute and Process of Making—John B. Neuendorff, San Antonio, Tex. Filed May 18, 1921. No. 1,666,976.

Manufacture of Fuel Briquettes—Ernest Windsor, Bowen, London, England. Filed Sept. 27, 1927. No. 1,667,304.

Fuel Briquette and Method of Making Same—Jacob Shotwell Robeson, Pennington, N. J. Filed Sept. 26, 1924. No. 1,667,358.

Method of Producing Power—Milon J. Trumble, Alhambra, Calif. Filed Oct. 25, 1922. No. 1,667,403.

NEW YORK, May 4.—Trell W. Yocum, head of the Public Relations Department of the American Petroleum Institute, returned to New York last week after several months' stay in California visiting oil companies on the west coast. On his way east Mr. Yocum stopped at Cambridge Springs, Pa. for the spring meeting of the National Petroleum Association.



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INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

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National Petroleum News — **934.35**

"Home Study Course in Salesmanship for Wadhams' Station Men"

National Petroleum News, April 18, 1928, pp. 75-83.

Wadhams Oil Co., Milwaukee, Wis., devised a home study course for service station men. The course is in 10 lessons. The company expects to profit by having more intelligent operators, a smaller turnover with a better class of workers employed, and by increased sales. The article gives subjects of the various lessons, how Wadhams sold the course to its men, and the results expected. The course was prepared by the LaSalle Extension University, Chicago, under direction of Wadhams Oil Co.

Kite, W. C. — **305.**

"Geology of Kingfisher and Canadian Counties (Okla.)

Oklahoma Geological Survey Bulletin 40-O, July, 1927, 13 p., 30 cents.

A brief account of the little that is known on the geology of a part of Oklahoma now believed to hold important possibilities. Kingfisher adjoins Logan county on the west. Logan county is at this time the scene of a drilling campaign, seeking production in the Wilcox sand at 6000 feet. Three good wells have been completed in this formation. The bulletin lists a number of dry holes and contains one structure map. Cross index 111.32.

Lawrence E. Smith — **532.7**

"Light Machine Used with Pulling Masts for Cleaning out Wells"

National Petroleum News, April 11, 1928, p. 67-68.

Description of equipment invented by John W. Smith, production superintendent for Prairie Oil & Gas Co., and Gregg E. Sawyer, assistant superintendent, for cleaning out small wells. The machine is used in connection with any rod and tubing pulling machine and tractor. It not only pulls rods and tubing and operates bailer on sand pump but is also used, with a light string of tools, for drilling up cavings. Application has been made for patent.

Lester C. Uren — **516.3**

"Selection of Power Equipment for Oil Well Pumping Service." Part 1

National Petroleum News, April 18, 1928, p. 24-26.

One of a series of articles on the general subject of oil well pumping, and the first of two articles on the advantages and disadvantages of electric power as applied to this oil field use. History of development of electric power in oil production service is given. Types of electric motors used in operating wells are described and power requirements for pumping and well pulling service given. Illustrated.

Roger B. Stafford — **926.**

"Reports of 33 Companies Show Profits for 1927 Half Those of 1926"

National Petroleum News, April 25, 1928, p. 55-60.

Review of 1927 financial statements of 33 important oil companies, in which totals showing net profits for all companies, assets, invested capital, inventories and cash and so on are given. A table is carried, made up from the balance sheet items of the individual companies, in which net operating income; net profits or loss; total assets; fixed assets before reserves; depreciation, depletion and amortization reserve; permanent investments; cash and marketable securities; refined and crude oil inventory; total current assets; total current liabilities; net working capital; capital stock; funded or deferred debt and surplus is given.

Case, J. B. — **437.**

"Landing and Cementing Long Water Strings"

Summary of Operations California Oil Fields. Nov. 1927, Vol. 13, No. 5, pp. 5-17.

Highly developed efficiency in handling long casing strings in the hole, together with the placing of large quantities of cement behind them in limited time, are discussed. The author, who is chief deputy supervisor of the California department of petroleum and gas, gives fundamental principles of the work and describes west coast operating practice. Careful handling of casing is stressed and cementing conditions are detailed.

Ryan, Paul 913.12

"Natural Gasoline Industry Must Make New Products, Find New Markets," Article 3

National Petroleum News, April 4, 1928, pp. 74-83.

The author describes possibilities of the natural gasoline manufacturer marketing his stabilized natural gasoline as motor fuel and the butane removed from it as a chemical raw material or his unstabilized gasoline to a refiner, or the sale of the unstabilized gasoline to a chemical plant. Advantages and drawbacks of these courses are discussed and concrete examples given of the working out of each system, when shipping from definite points to specified destinations. (Article 1, published N. P. N. Jan. 25, p. 17; Article 2, N. P. N. Feb. 1, p. 49.

Truesdell, Paul 741.31

"Good Products at Low Cost from any Crude," Article 1

National Petroleum News, April 11, 1928, pp. 54-62.

Crude distillation, heat exchange, water supply and handling thereof in the Marland Refining Co. plant at Ponca City, Okla., are described. (Cross reference under 723.)

Emig, Frank H. 940.5

"Cost Finding Methods for Marketers and How to Use Them" Article 6

National Petroleum News, April 18, 1928, pp. 49-52.

Assembling the facts of business is covered in the final article of this accounting series. Illustrations given are a typical trial balance, a profit and loss statement, and a balance sheet (also called a financial statement). The text discounts the contents of these three statements, which are the barometers of business.

MacCoull, Neil 214.2

"Methods of Measuring Detonation"

S. A. E. Journal, Vol. XX, No. 4, pp. 457-467 (April) 1928.

An attempt to correlate measurements of anti-knock values of gasolines determined by various laboratories. Six samples of gasoline were sent to each of 10 laboratories that agreed to cooperate, the principal object being to learn whether volatility affects the anti-knock values obtained from multi-cylinder engines more than it affects the values obtained from single-cylinder engines. The results of the tests are shown in tables and charts accompanying the article.

Story, Leroy G. and Snow, Robert W. 221.

"Phenols in Petroleum Distillates"

Industrial and Engineering Chemistry, Vol. 20, No. 4, pp. 359-364 (April) 1928.

Phenols have been separated from petroleum distillates and studied. More of these compounds present in cracked distillate show that the reaction producing them occurs chiefly in cracking. Investigation indicates that the product is composed chiefly of high boiling compounds with very little or no carbolic acid but the cresols have been isolated and identified. Low boiling cracked distillates may be selected which yield phenols approaching the composition of commercial cresylic acid although the yield is too small to be commercially attractive under normal refinery conditions.

Gerstenberger, D. F. 725.

"Continuous Treatment of Lube Oils With Ammonia for Neutralizing"

National Petroleum News, April 11, 1928, pp. 111-112.

Methods of treating lubricating oils continuously which have been used for years. Advantages of using ammonia instead of caustic for neutralizing the acid oil are described and a flow sheet of a system for carrying out such continuous treating is shown.

Bridgeman, Oscar C. 214.2

"Volatility Data from Gasoline Distillation Curves"

S. A. E. Journal, Vol. XX, No 4, pp. 437-448 (April) 1928.

Author states that data for a number of gasolines obtained by the equilibrium air-distillation method, have been analyzed recently in comparison with the distillation curves of some fuels as determined by the standard A. S. T. M. distillation method. It is stated that the A. S. T. M. distillation curves give a true indication of the relative volatility of gasolines.

Clark, Robert W. 305.

"Geology of McIntosh county"

Oklahoma Geological Survey Bulletin 40-W, January, 1928, 14 pages, 30 cents.

McIntosh county has only a few oil pools and none of them of large extent. Gas has been found in several localities. The county is comparatively untested for either. The report gives an account of stratigraphy, surface and sub-surface structure and development. It contains structure map and cross-sections. Cross index 111.32.

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Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

Make Tanks Breathe Gas, Not Air

A FIRE marshall who is a chemical engineer as well is talking now: "If you can keep an atmosphere of gas in a tank it will not explode. A fire around the tank will form more gas but with vent valves and hatches weighted down instead of bolted, the danger of bursting the tank due to gas pressure is not great.

"A flame arrester on top of the tank is desirable in case an explosive mixture should be formed in the tank by reason of having a hatch open or filling a tank recently cleaned. A relief valve on top of the tank which will not open to relieve gas or take in gas until the pressure difference becomes about 2 inches of water will not harm any standard gas tight tank.

In a battery of six refinery tanks, for example, you may be pumping in and out of the various tanks simultaneously. If these tanks are connected to a common header gas will flow from the tanks being filled to the tanks being emptied. Any surplus gas due to agitation, vaporization, etc., will put a slight pressure on the main header, say one half inch of water.

"If this header is connected to the gas recovery plant through a sensitive vacuum regulator having say 6-inch water vacuum on the recovery plant side, this vacuum valve will take the excess gas from the main header and deliver it to the recovery plant. * * *

"Tanks hooked up like this are not subject to internal explosions which probably would shear the top rivets and blow the top off the tank. As long as you have the top on the tank you have control of almost any fire if you can get any cooling on the tank at all.

"By properly locating the swing check valve held open by a small lead wire soldered on and a horizontal type check valve mounted at 45 degrees hot gases will drop the check valve which will stay shut in case of a slow drift of hot gas and the check valve set at an angle will close in case of an explosion until the lead wire melts on the other check.

"The flame arrester is an additional protection to the tank. An arrangement of this kind makes the tanks safe against explosion in case of fire and eliminates any loss of gasoline."

The author of the above is Alfred Mullhaupt Jr., chief engineer Kendall Refining Co., Bradford, Pa. It was part of a paper he presented at the National Petroleum Association spring meeting at Cambridge Springs, Pa., April 20.

Sharing Refinery Technical Knowledge

IT IS significant of changing times when eight Pennsylvania refiners sit down together at luncheon once a week, and put into a common fund the results of their years of experience in filtering lubricating oils. It was the result of such conferences that was set forth in the paper on "Filter House Problems" read by Harry R. Lewis of the Conewango Refining Co. at the Cambridge Springs meeting of the National Petroleum Association.

The secrecy that still prevails to some extent in the oil industry is a relic of the day when only a few men in the country knew anything about refining and if they kept their knowledge to themselves nobody else would go into business to compete with them. How far from the truth that is today needs not be commented on.

Of course, nobody would advocate a company throwing open valuable and sound patent rights but, in a great many cases, withholding of information is based entirely on the negative notion trying to prevent the other fellow from making money rather than on the positive one of making more money for your own company.

Often also it is based on the erroneous notion that the other fellow will never learn his business unless you tell him your secrets. Maybe he knows them now and more besides.

Pennzoil Installs Vapor Recovery Plant

THE Burrell-Mase Engineering Co., Pittsburgh, is building a tail gas recovery system at the refinery of the Pennzoil Co. at Oil City, Pa., according to George A. Burrell, head of the company. Burrell and Mase also are installing several of their gasoline absorbers at natural gasoline plants.

Liquid Phase Cracking Plant Going In

A JENKINS cracking unit with capacity of 1000 barrels a day of charging stock is being installed at the plant of the Tri-State Refining Co., Kenova, W. Va., according to G. C. Davison, president of the company. The Tri-State operates on Kentucky crude and it is the purpose of Mr. Davison to use the new unit for cracking fuel oil. It is understood that most of the Jenkins units in operation are running on gas oil as cracking stock.

Two Filtering Systems

JUDGING by the extent to which refiners of Pennsylvania crude are improving their percolating filter plants and installing furnaces for restoring the spent clay, contact filtering will be a long time in finding its way into many eastern plants. Except for California and some other places where special conditions or special requirements exist, percolating filtering now seems to have the call.

Further adoption of contact filtering apparently depends to some extent at least on finding of economical means of restoring the clay so it can be used again. Work is being done toward this end. It is said that some powdered clays can economically be reburned now in multiple hearth furnaces but not by any means all and not those most available for general use.

Refinery - Tank Wagon Markets

National Petroleum News

U. S. Motor Passes 7 Cents in Oklahoma; Exporters Active in Mid-Continent

MID-CONTINENT refiners enjoyed an active market this week. Demand for all major commodities was good. While there were one or two soft spots in the list at the close of the week, the market as a whole was regarded as being in the best position of the last 18 months.

Exporters kept the high gravity gasolines active. Jobbers and large refiners that were buying to fill their own requirements, took care of the lower gravity goods, with the result that, for the first time since early in August, 1927, price of 58-60 U. S. Motor in Oklahoma moved above 7 cents a gallon.

Natural gasolines were the slowest selling of the commodities.

Kerosenes began to get a play late in the week and prices moved up.

Distillates and gas oils were in steady demand.

Fuel oils lost some ground early in the week but considerable buying developed from the middle of the week on and price declines were checked.

Gasolines

Exporters were forced to obtain the bulk of their gasoline this week in Oklahoma despite price advances of 0.125 cent a gallon offered north Texas refiners. One Oklahoma refiner early in the week sold 2,500,000 gallons of 58-60 U. S. Motor at 7 cents a gallon. This refiner is virtually out of the gasoline picture for the next two or three weeks.

Sales totaling 2,500,000 gallons of 64-66, 375 end point gasoline for export at 7.50 cents a gallon were reported by Oklahoma refiners. Exporters were inquiring for gasolines ranging in gravity from 54-58 up to 64-66, with only small lots reported obtainable.

Jobbers were reported taking out their full contract quotas and resale buyers were actively seeking goods for May delivery. Most refiners were asking from 0.25 to 0.50 cent a gallon more for gasolines for deferred shipment than for spot. As the price of U. S. Motor swung above 7 cents, the lower gravity gasolines moved up.

Despite offers of 7.625 cents a gallon for 64-66, 375 e.p. gasoline, exporters were unable to get more than 1,000,000 gallons this week from north Texas refiners who are booked far ahead for export shipment.

One or two large refiners in Texas again were actively inquiring for U. S. Motor for May delivery. One purchase of 150 cars was reported. This gasoline probably will be shipped on export rate to a Gulf terminal and thence for coastwise delivery, while the refiner's production will be distributed on domestic rates to his own stations in the south and southeast. That the gasoline was difficult to obtain in Texas was evidenced by the fact that one of the buyers attempted to purchase 150 cars of gasoline in the Oklahoma field early in the week.

Price of 58-60 U. S. Motor in Texas has moved up to 7.125 to 7.25 cents a gallon, and one refiner said that at these prices it was more profitable for him to make the lower grades than to cut export gasoline. He believed that exporters would have to advance their offers if the U. S. Motor price continued to move upward.

Rains in some of the normal marketing territory of the Kansas refiners slowed up gasolines slightly but toward the end of the week business was better. High waters in the Arkansas-Louisiana district probably slowed up gasoline demand slightly but prices moved up fractionally. A majority of refiners were moving their production without difficulty.

Natural Gasolines

The price of natural gasolines broke when demand did not pick up as had been expected. No heavy buying has been done for 10 days or two weeks. Shipments have been mostly on contracts, the spot buying being limited to small lots.

Little distress goods had appeared on the market, however, prior to the end of this week. Several manufacturers were of the opinion that active buying would develop within the next few days which would be sufficient in volume to check the downward trend of prices.

Grades A and AA moved under 6 cents a gallon early in the week. Grades B, BB and C lost approximately 0.25 cents a gallon.

Kerosenes

Price advances of 0.125 to 0.375 cent a gallon on kerosenes were witnessed in all parts of the Mid-Continent. In Oklahoma the minimum price for 41-43 water white grade moved to 5.25 cents. Several refiners obtained 5.375 cents for their treated goods. Those making 42-44 w.w. kerosene were obtaining 5.75 cents a gallon. Several refiners said they were limiting their kerosene sales at present only to their regular customers. One refiner said he had telegraphed his branch office managers late in the week that only a few cars would be available each week for them to sell, and that they would have to do the best they could with those few cars.

Kansas refiners continued to buy a good portion of their kerosenes. Two or three said they were even having difficulty taking care of their regular trade in this way. In Arkansas the price of 42-44 kerosene moved to 5.75 cents and a few quotations were out late in the week at 6 cents. Little kerosene was reported available either in Arkansas or Louisiana for spot shipment. Many jobbers in the southeastern states continued to look to north and central Texas for their kerosenes. Goods in those districts became scarcer and prices moved up fractionally.

Stove Distillates

Prices of stove distillate have remained unchanged with late buyers of 32-36 straw grade paying 3 cents and up for their goods.

Gas Oil

Refiners had no difficulty moving their gas oil. Prices were well pegged. A large Independent refin-

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices May 7	Prices Apr. 30	Prices Apr. 23
52-54 Naphtha	8.50 – 9.625	8.50 – 9.50	8.25 – 8.75
54-56 Naphtha	8.75 – 9.75	8.75 – 9.625	8.50 – 9.00
58-60 U.S. Motor 437 e.p.	9.50 –10.00	9.00 – 9.50	9.00 – 9.25
60-62 400-410 e.p. gasoline	10.00 –10.25	9.75 –10.00	9.25 –10.00
64-66 390 e.p. gasoline	10.25 –11.00	10.00 –10.50	9.75 –10.50
68-70 Str.-run gas. 350-360 e.p.	11.50 –12.00	11.00 –11.50	10.50 –11.50
OKLAHOMA			
48-50 450 e.p. naphtha	†6.75	†6.50 – 6.75	†6.375– 6.50
50-52 450 e.p. naphtha	†6.75	†6.50 – 6.75	†6.375– 6.50
56-58 450 e.p. gasoline	6.625– 6.75	6.50	6.50
58-60 450 e.p. gasoline	6.75 – 6.875	6.625	6.50 – 6.625
64-66 390 e.p. gasoline	7.25 – 7.375	7.25 – 7.375	7.00 – 7.125
68-70 350-360 e.p. gasoline	7.50	7.50	7.375– 7.50
OKLAHOMA (Weighted Average Prices)			
58-60 U. S. Motor, 437 e.p.	7.0347	6.9136	6.8441
60-62 437 e.p. gasoline	7.1250	6.9455	6.8690
60-62 400 e.p. gasoline	7.2500	7.0882	7.0719
64-66 375 e.p. gasoline	7.4583	7.2188	7.2500

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 37 of this issue. The two previous week's prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS* (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	7.125– 7.25	7.125	6.875– 7.00
60-62 400 e.p. gasoline	7.375– 7.50	7.375	7.25
64-66 375 e.p. gasoline	7.75	7.75	7.50
NORTH TEXAS			
48-52 450 e.p. naphtha	†6.75	†6.50	†6.50
56-58 450 e.p. gasoline	†6.625	†6.50 – 6.625	†6.50
58-60 450 e.p. gasoline	†6.625– 6.75	†6.50 – 6.625	†6.50
58-60 U.S. Motor 437 e.p.	**7.125– 7.25	**7.00 – 7.125	**6.875– 7.125
60-62 400 e.p. gasoline	7.375	7.25	7.125– 7.25
64-66 390 e.p. gasoline	7.50	7.25 – 7.375	7.25
64-66 375 e.p. gasoline	7.625	7.50 – 7.625	7.375
68-70 350-360 e.p. gasoline	7.625– 7.75	7.625	7.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	7.50	7.50	7.25
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	6.875	6.75	6.50
58-60 450 e.p. gasoline	7.25	7.00	6.75
58-60 U.S. Motor 437 e.p.	7.50 – 7.625	7.50	7.25
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	8.50 –12.50	9.00 –12.50	8.00 –11.00
*58-60 U.S. Motor 437 e.p.	9.00 –13.00	10.00 –13.00	10.50 –11.50
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

*3c tax to be added if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Since Oct. 1, 1927 naturals must pass corrosion test.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	†5.50 – 5.875	†6.00 – 6.25	†6.25 – 6.375
Grade A, 72-79.9, 90% Recovery	†5.50 – 5.875	†6.00 – 6.25	†6.25 – 6.375
Grade BB, 84-92, 85% Recovery	†5.125– 5.25	†5.25 – 5.50	†5.25 – 5.75
Grade B, 76-83.9, 85% Recovery	†5.125– 5.25	†5.25 – 5.50	†5.25 – 5.75
Grade C, 80-92, 78% Recovery	†5.00	†5.00 – 5.25	†5.25
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	†5.50 – 5.75	†6.125– 6.25	†6.25 – 6.375
Grade A, 72-79.9, 90% Recovery	†5.50 – 5.75	†6.125– 6.25	†6.25 – 6.375
Grade BB, 84-92, 85% Recovery	†5.25	†5.375– 5.50	†5.25 – 5.75
Grade B, 76-83.9, 85% Recovery	†5.25	†5.375– 5.50	†5.25 – 5.75
Grade C, 80-90, 78% Recovery	†5.00	†5.125– 5.25	†5.25
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†6.00	†6.25 – 6.50	†6.625– 6.87
Grade BB	†5.625– 5.75	†5.75 – 5.875	†6.00 – 6.25
Grade C	†5.50	†5.50 – 5.625	†5.75
CALIFORNIA			
75-85, 375-390 e.p. blend	8.50 – 9.00	8.00 – 9.00	8.50 – 9.50

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 e.p.	Prices	.....	.....
64-66 Blend 437 e.p.	temporarily	.....	.....
60-62 Blend 437 e.p.	discontinued	.....	.....
OKLAHOMA			
64-66 Blend 437 e.p.	†6.75	†6.50 – 6.625	†6.50

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.625– 7.00	6.50 – 7.00	6.50 – 6.75
46 w.w. kerosene	7.00 – 7.50	7.00 – 7.50	6.75 – 7.25
47 w.w. kerosene	7.25 – 8.00	7.25 – 7.75	7.00 – 7.50
300 mineral seal	7.75	7.50 – 7.75	7.50 – 7.75
OKLAHOMA			
41-43 w.w. kerosene	5.125– 5.25	5.00 – 5.25	5.00
42-44 w.w. kerosene	5.75	5.50	5.375– 5.50
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	5.375– 5.50	5.375	5.25 – 5.375
42-44 w.w. kerosene	5.75 – 6.00	5.625 – 5.75	5.50 – 5.625
NORTH TEXAS			
40-42 w.w. kerosene	†4.75 – 4.875	†4.75	†4.625
41-43 w.w. kerosene	†5.00 – 5.25	†5.00	†5.00
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	5.50	5.25 – 5.50	5.25 – 5.50
ARKANSAS (Arkansas destination only)			
42-44 kerosene	5.75	5.50	5.50
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEUTRAL OIL

Vis.	PENNSYLVANIA (Viscosity at 70°F.)		
200	No. 3 Assoc. Filt.	33.50 –34.25	33.50 –34.00	33.50 –34.00
180	No. 3 Assoc. Filt.	31.50 –32.50	31.50 –32.00	30.50 –31.50
150	No. 3 Assoc. Filt.	27.25 –28.00	27.00 –28.00	27.00 –27.50
	(Non Viscous)			
34	Grav. 330-340 Flash	7.75 – 8.25	7.50 – 8.00	7.00 – 8.00
36	Min. Neut. 300-305 Flash	6.50 – 8.00	6.50 – 7.75	6.50 – 7.50
	****OKLAHOMA**			
Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150	No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150	No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180	No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180	No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180	No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200	No. 3	9.625–11.00	9.625–11.00	9.625–11.00
200	No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200	No. 5	9.00 –10.50	9.00 –10.50	9.00 –10.50
220	No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220	No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220	No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240	No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240	No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240	No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280	No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280	No 4	15.25	15.25	15.25
280	No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300	No. 5-6	17.00	17.00	17.00
	GULF COASTAL			
Vis.	Color	(Viscosity at 100°F., pour test 0)		
100	No. 2 Unfilt. Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200	No. 3 Unfilt. Pale	9.50 –10.25	9.50 –10.25	9.50 –10.25
300	No. 3 Unfilt. Pale	10.50 –11.25	10.50 –11.25	10.50 –11.25
500	No. 3½ Unfilt. Pale	12.50 –13.25	12.50 –13.25	12.50 –13.25
750	No. 4 Unfilt. Pale	14.50 –15.50	14.50 –15.50	14.50 –15.50
200	No. 5½ Red Oil	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
300	No. 5½ Red Oil	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
500	No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750	No. 6 Red Oil	12.75 –13.50	12.75 –13.50	12.75 –13.50
	CALIFORNIA			
Vis.	Color	(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300	No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450	No. 3-3½	15.50 –16.00	15.50 –16.00	15.50 –16.00
550	No. 3-3½	16.50 –17.00	16.50 –17.00	16.50 –17.00
600	No. 3-3½	17.00 –17.50	17.00 –17.50	17.00 –17.50
200	No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300	No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400	No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500	No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600	No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700	No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	22.00 –24.00	21.00 –24.00	21.00 –24.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.50 –10.00	8.50 –10.00	8.50 –10.00
600 St. Ref. Dark Green	6.50 – 8.00	6.50 – 8.00	6.50 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	9.75 –11.50	9.50 –11.00	9.25 –11.00
650 Steam Refined	11.00 –13.00	11.00 –13.00	10.50 –12.50
600 Flash	14.00 –18.00	14.00 –17.00	14.00 –16.50
625 Flash	24.00 –28.00	24.00 –28.00	24.00 –27.50
600 Warren E	16.00 –17.00	15.50 –17.00	16.00 –17.00
600 Oil City E	15.50 –17.00	14.50 –16.50	15.00 –16.50
600 D Filtered	23.00 –24.00	22.00 –23.50	22.00 –23.50
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210°, 540-550 flash, No. 8 color	29.00 –30.00	28.00 –29.00	28.00 –28.50
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	26.50 –28.00	25.50 –27.00	25.50 –27.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

ing company has a standing offer for gas oil for cracking and will pay 2.50 cents a gallon for Oklahoma goods. Small lot orders moved mostly at 2.625 cents a gallon.

An Arkansas refiner sold a quantity of 32-36 gas oil for export early in the week at 2.75 cents a gallon. The buyer bought with the understanding that the refiner ship as much as he possibly could by May 18. The refiner said he probably would get out 15 or 20 cars.

The export buying in north Texas the last week of April has kept the market steady in that district. Buyers sought more goods this week with little success.

Fuel Oils

Active buying, which developed about the middle of the week, halted the downward trend of fuel oil prices. Buying the last week of April had not been so brisk as many refiners had expected and some goods appeared on the market at prices from 5 to 7.5 cents a barrel under those prevailing April 20 to 25. Competition developed from other areas and a few refiners grew pessimistic over the outlook for fuels over May.

Low gravity fuels are selling at a minimum of 72.5 cents a barrel. One refiner the last week of April quoted a marketer 70 cents a barrel for 14-16 gravity fuel over May. The marketer this week sought to buy at that price only to learn the refiner had sold his production for the month at 72.5 to 75 cents a barrel.

Several refiners in Oklahoma reported late in the week they were virtually out of the fuel oil picture for the next several days, whereas a week ago they were looking for new business. Large quantities were sold both to industrial users direct, and resale agents.

Neutrals and Cylinder Stocks

Movement of most grades of neutral oils was good. Demand was especially good for the 200 No. 3, and the 200 No. 5 colors. Prices were unchanged.

Refiners that make bright stock, report demand has improved considerably the last few weeks. Price of 150-160 vis. @ 210 grade has moved up approximately 1 cent a gallon. No sales were reported this week at 21 cents. Only a few sales were made at 22 cents, with most refiners quoting 23 cents and up.

Wax

It is doubtful if nay wax is obtainable in Oklahoma for immediate shipment, and little for delivery over May. Virtually every refiner in the field reports he is sold up and is not quoting at present.

One large refiner said this week he had sold a quantity in tank cars but the buyer later could not take all the goods easily, and had asked the refiner to sell the surplus elsewhere if he could. The original price was 3.25 cents a pound. The refiner was able to bag and barrel the wax and move it for 3.625 and 3.75 cents f.o.b. refinery.

The better wax market in the east has been reflected in the Mid-Continent. One refiner said recently that in his opinion wax would remain scarce so long as refiners continued to operate on the large percentage of no wax crudes.

Gasoline Quotations Withheld By Many California Refiners

Staff Special

LOS ANGELES, May 5

THE California gasoline market was a mixed up affair this week. Most sellers were refusing to quote on gasoline but intimated that 8 to 8.50 cents was their idea for U. S. Motor. Buyers were unwilling to pay prices that high.

Some U. S. Motor was quoted by other refiners at 7.70 to 7.75 cents which with the 2-cent tanker rate made this range about equal to prices of California gasoline on the Atlantic coast.

Tank car prices of U. S. Motor ranged 8.50 to 12.50 cents according to destination. The low price was for goods shipped outside California into territory in competition with Mid-Continent gasoline. The high price was for gasoline shipped to California destinations and represents 5 cents under the service station price before tax. Some of the major companies are selling on a 4-cent service station margin. The 6-cent margin seems to have disappeared since the smaller Independent refiners are forced to pay a premium for refinable crude.

Natural gasoline market is dull. One contract was signed this week at 10.50 cents under the service station price without tax, which means 7 cents at present.

California refiners in their bids to supply the navy with fuel oil indicated their ideas for this product to be at least 76 cents a barrel. Pan American Petroleum Co. has been supplying the navy at 64.50 cents a barrel, San Pedro base price.

Bids were opened May 2 at Washington on oil for the coming year. Associated Oil Co. bid 76 cents, San Pedro, on only 500,000 barrels. Pan American bid 79.375 cents, General Petroleum Co. 82 cents, and California Petroleum Corp. $1. From 2 to 7 cents a barrel were added for barge deliveries. Prices ranged up to 99.25 cents low at some Puget Sound terminals.

Uncracked gas oil is scarce and a cargo, if it could be found, would bring around $1.10, with the cracked product selling for about 10 cents less. Some of the smaller refiners have some uncracked gas oil on hand, but since it would cost between 10 and 15 cents to ship to the harbor and load, their price is slightly under $1. Diesel oil is 90 cents to $1.

One or two smaller refiners are asking as high as 6 cents for kerosene in tank cars, but it is reported that kerosene is still available at 5 to 5.50 cents.

Ohio Gasoline Prices Reach Group 3 Level

CLEVELAND, May 7.—Three of leading refining companies that market gasoline by tank car in Ohio have advanced their prices for U. S. Motor gasoline to 11 cents delivered, tax to be added. Two of these three companies are reported to be almost sold up for May. This price is at the top of the Group 3 market, the first time this situation has risen in more than a year.

Sales of U. S. Motor in Ohio in the last week have been at 10.50 and 10.75 cents a gallon, delivered, tax to be added.

INCREASE YOUR ALE

Color your anti-knock or high test gasoline an attractive shade by which the public will recognize and remember your good product.

DYKEM GASOLINE COLORS

Made especially for gasoline; simple, safe, economical

BLUE GREEN PURPLE RED ORANGE

Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, INCORPORATED

11th & Monroe Sts. **St. Louis, Mo.**

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices May 7	Prices Apr. 30	Prices Apr. 23
Per Pound, New York			
122-124 white crude scale	3.875– 4.00	3.75 – 4.00	3.50 – 3.75
124-126 white crude scale	4.00	3.75 – 4.00	3.50 – 3.75
**OKLAHOMA			
124-126 White Crude Scale	3.75	3.50 – 3.75	3.00 – 3.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
30-34 fuel oil	5.00	4.75 – 5.00	4.75 – 5.00
28-32 fuel oil	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
OKLAHOMA			
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil, straw	†2.625– 2.75	†2.625– 2.75	†2.625– 2.75
32-36 dark gas oil	2.625	2.625	2.625
28-30 fuel oil (in bbls.)	$0.90 – 0.975	$0.90 – 0.975	$0.95 – 1.00
26-28 fuel oil (in bbls.)	$0.875– 0.90	$0.875– 0.90	$0.875– 0.925
24-26 fuel oil (in bbls.)	**$0.80– 0.85	**$0.80– 0.85	**$0.85– 0.875
22-26 fuel oil (in bbls.)	**$0.775–0.80	**$0.775–0.80	**$0.775–0.825
18-22 fuel oil (in bbls.)	**$0.725– 0.75	**$0.75– 0.775	**$0.775–0.80
16-18 fuel oil (in bbls.)	**$0.725–0.75	**$0.75	**$0.775–0.80
14-16 fuel oil (in bbls.)	**$0.725–0.75	**$0.75	**$0.775–0.80

Note: Zero cold test low flash gas oils sell for ¼ cent more per gallon. Zero cold test fuel oils sell for 5 to 10 cents more per bbl.

KANSAS *(F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil	2.875	2.875	2.875
24-26 fuel oil	*$0.90 – 1.00	$0.90 – 1.00	*$0.90– 1.00
18-22 fuel oil	*$0.80 – 0.85	$0.80 – 0.85	*$0.85
NORTH TEXAS			
38-40 straw distillate	3.00	3.00	3.00
32-36 gas oil, cracked	2.50	2.50	2.375– 2.50
32-36 gas oil, uncracked	2.50	2.50	2.375– 2.50
24-26 fuel oil (in bbls.)	$0.725– 0.775	$0.725– 0.775	$0.775– 0.80

GULF COASTAL	Prices May 7	Prices Apr. 30	Prices Apr. 23
Fuel (in bbls.)	$1.40 –$1.50	$1.40 –$1.50	$1.40 –$1.50
Gas oil	4.375– 4.50	4.375– 4.50	4.375– 4.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.75	2.625– 2.75	2.625– 2.75
32-36 gas oil, straw	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
16-20 fuel oil (in bbls.)	$0.85	$0.85	$0.85 – 0.90
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.75	2.75	2.75
Road Oil	$1.15	$1.15	$1.15
CALIFORNIA* (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.70 –$0.75	$0.70 –$0.80	$0.70 –$0.75
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$0.95 –$1.10	$1.05 –$1.10	$1.05 –$1.10
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ½c to ¾c per pound less.)			
Snow White	8.00 – 8.125	8.00 – 8.125	8.00 – 8.375
Lily White	7.00 – 7.125	7.00 – 7.125	7.00 – 7.375
Cream White	6.00	6.00	6.00 – 6.375
Blonde	‡	...‡	4.50
Light Amber	3.25	3.25	3.25 – 3.625
Amber	3.00	3.00	3.00 – 3.375
Red	2.75	2.75	2.75 – 3.125
Green No. 5 color	‡	...‡	2.25

‡No refiner quoting.

**PETROLEUM COKE

OKLAHOMA

(Per ton in car lots)

Lump	$4.50 – 5.00	$4.50 –$5.00	$4.50 –$5.00
Still run	$2.75 – 3.00	$2.75 –$3.00	$2.75 –$3.00
Breeze	$1.75 – 2.00	$1.75 –$2.00	$1.75 –$2.00

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

Buying Wax for Resale Active in New York

NEW YORK, May 5.—Buying of wax by the resale trade in New York, however, was sufficient to bring further price advances for all grades of scale and fully refined. Foreign demand did not improve.

Early this week one large dealer reported paying 3.80 cents for a relatively small lot of 122-124 A.m.p. white crude scale. The volume of scale available at this level was small and after that sale the asking market advanced. The same dealer later reported his firm bid of 3.95 cents a pound for 150 tons of 122-124 for May delivery had been rejected.

At the end of the week a majority of refiners who were in position to offer any scale for late May delivery were asking 4 cents. One refiner said he was refusing to quote feeling that later in the month he would be able to get a better price. Bids were in the market for between 300 and 350 tons of white crude scale Saturday.

At least three large refiners of fully refined wax were said to be sold up for the balance of May. The 123-125 and 125-127 A.m.p. grades continued scarce and were quoted nominally this week at 4.50 cents a pound. Other grades of fully refined also were quoted 0.25 to 0.375-cent higher with 135-137 A.m.p. held at 6.25 to 6.50 cents a pound.

Yellow crude scale was quoted at 3.75 cents a pound, New York.

Domestic buyers were more active in the New Orleans market than foreign buyers, although occasional sales to South American buyers were reported. White crude scale was quoted mostly at 3.875 to 4 cents bringing prices nearly on a parity with New York. One refiner said he had refused an offer of 3.875 cents for May delivery.

Fully refined grades were the usual 0.25 to 0.5-cent behind the New York market with 125-127 A.m.p. quoted at 4.25 to 4.375 cents and 135-137 A.m.p., 6 cents.

CORRECTION

Price of Oklahoma and North Texas natural gasolines, Grades B and BB, have been published in error in the April 16 column of prices in the refinery market table of the past three issues of NATIONAL PETROLEUM NEWS.

Prices in both districts should have been 4.50 to 4.75 cents, instead of 4.375 to 4.50 cents on April 16.

On April 30, prices of Oklahoma Grades B and BB natural should have been 5.25 to 5.50 cents, instead of 5.50 cents flat, as published in the May 2 issue of NATIONAL PETROLEUM NEWS, page 122. Information of this change was received too late to correct the refinery market table of that issue.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of New Jersey—S.s. prices gasoline advanced 3 cents, Hickory, Mt. Airy, and Salisbury, N. C., to 23 cents, **April 23.**

Standard of Louisiana—T.w. price gasoline had been reduced 1 cent, Little Rock, to 19 cents, **March 28,** and t.w. and s.s. prices advanced 1 cent, **April 5,** to 20 cents and 22 cents respectively, including 5 cent state tax.

Magnolia Petroleum—T.w. and s.s. prices gasoline advanced ½ cent, Texarkana, to 16.5 cents and 20.5 cents including 3 cent Texas tax, **April 28.**

Canada—T.w. and s.s. prices gasoline advanced 3 cents, Saskatchewan, **May 1,** to cover provincial gasoline tax of that amount which went into effect that day. There had been no tax previously in this province.

T.w. and s.s. prices gasoline advanced 2 cents, Prince Edward Island, to cover increase of that amount in provincial gasoline which was raised to 5 cents, **May 1.**

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)

These Prices in Effect May 7, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	14
Baltimore, Md.	16	4	20	23	12
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	14
Danville, Va.	16	5	21	*	14
Norfolk, Va.	16	5	21	24	14
Richmond, Va.	16	5	21	24	14
Roanoke, Va.	16	5	21	24	14
Petersburg, Va.	16	5	21	24	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	23	14
Parkersburg, W. Va.	16	4	20	23	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	16	0	16	19	15
Buffalo, N. Y.	16	0	16	19	14
Rochester, N. Y.	16	0	16	19	12
Syracuse, N. Y.	16	0	16	19	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	17	4	21	23	15
Burlington, Vt.	16	3	19	22	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	13
Philadelphia, Pa.	16	*	16	*22	13
Allentown, Pa.	16	*	16	*22	13
Erie, Pa.	12	*	12	*18	13
Scranton, Pa.	16	*	16	*22	13
Altoona, Pa.	16	*	16	*22	13
Dover, Del.	16	3	19	22	13
Wilmington, Del.	16	3	19	22	12
Providence, R. I.	19	2	21	21	15
Boston, Mass.	19	0	19	19	15
Springfield, Mass.	19	0	19	19	15
Worcester, Mass.	19	0	19	19	15
Hartford, Conn.	19	2	21	21	14
New Haven, Conn.	19	2	21	21	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	14	5	19	21	15
Covington, Ky.	15	5	20	22	15.5
Clarksdale, Miss.	14	4	18	20	10
Gulfport, Miss.	††15.5	4	††19.5	21.5	14
Jackson, Miss.	14	4	18	20	12
Natchez, Miss.	13.5	4	17.5	19.5	14
Vicksburg, Miss.	13.5	4	17.5	19.5	14
Birmingham, Ala.	16	4	20	22	16
Mobile, Ala.	16	4	20	22	14
Montgomery, Ala.*	17	4	21	23	15.5
Atlanta, Ga.	16	4	20	22	†15
Augusta, Ga.	16	4	20	22	†16.5
Macon, Ga.	16	4	20	22	†16.5
Savannah, Ga.	14	4	18	20	†14.5
Jacksonville, Fla.	14	5	19	21	13.5
Miami, Fla.	16	5	21	23	14.5
Tampa, Fla.	14	5	19	21	13
Pensacola, Fla.	**15	5	**20	22	13

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14.2	0	14.2	16.2	12.1
Quincy, Ill.	14.2	0	14.2	16.2	11.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	3	17.8	19.8	13.7
Grand Rapids, Mich.	14.7	3	17.7	19.7	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	14	2	16	18	12.9
Duluth, Minn.	15.5	2	17.5	19.5	12.9
Mankato, Minn.	12.1	2	14.1	16.1	12.7
Des Moines, Ia.	13.5	3	17.5	19.5	12.3
Davenport, Ia.	14.5	3	17.5	19.5	12.3
Sioux City, Ia.	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†14.9	2	16.9	18.9	10.6
St. Joseph, Mo.	†14.5	2	16.5	18.5	11.2
Fargo, N. D.	16.9	2	18.9	20.9	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	15.5	4	19.5	21.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.5	3	15.5	17.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline outside the city of Chicago is 1c for 50 gals. or more at one delivery; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

In Chicago, above discounts apply, except the 1c for 50 gal. dumps.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month, or 2400 gals. per year.

Discount on kerosene is 1c on 50 gal. dumps throughout territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	14	3	17	19	14.5
Pueblo, Colo.	14	3	17	19	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	14	3	17	19	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19.5	3	22.5	22.5	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	16.5	3½	20	22	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	15	5	20	22	12
Alexandria, La.	14	2	16	18	†14
Baton Rouge, La.	13	2	15	17	†12.5
Lake Charles, La.	14.5	2	16.5	18.5	†14
New Orleans, La.	*14.5	2	*16.5	*18.5	†14
Shreveport, La.	14.5	2	16.5	18.5	†13
Lafayette, La.	14	2	16	18	†13.5
Bristol, Tenn.	16	3	19	21	14
Chattanooga, Tenn.	15	3	18	20	15
Knoxville, Tenn.	15	3	18	20	15
Nashville, Tenn.	15	3	18	20	15
Memphis, Tenn.	14	3	17	19	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	14	3	17	19	14

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	18.25	12.25
McCook	14.75	2	16.75	18.75	11.50
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	18.5	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

MAGNOLIA PETROLEUM

Muskogee, Okla.	14	3	17	18	11
Oklahoma City	13	3	16	17	11
Tulsa, Okla.	12	3	15	17	11
Fort Smith, Ark.*	15	*3	18	20	12
Little Rock, Ark.	15	5	20	22	12
Texarkana, Ark.*	13.5	*3	16.5	20.5	12
Dallas, Tex.	11	3	14	18	11
Fort Worth, Tex.	12	3	15	18	11
Houston, Tex.	11	3	14	18	15
San Antonia, Tex.	12	3	15	18	10
El Paso, Tex.	14	3	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		19	....

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	22.5	3	25.5	29	22.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	25.5	3	28.5	33	25.5
ALBERTA					
Edmonton	26.5	3	29.5	33	26.5
Calgary	22.5	3	25.5	29	22.5
BRITISH COLUMBIA					
Vancouver	21	5	26	30	22
QUEBEC					
Montreal	20.5	5	25.5	29	21
Quebec City	22.5	5	27.5	33	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	22.5	3	25.5	30	22
Moncton	22.5	3	25.5	30	22
NOVA SCOTIA					
Halifax	22.5	5	27.5	32	22
Sydney	22.5	5	27.5	32	22
PRINCE EDWARD ISLAND					
Charlottetown	22.5	5	27.5	31	22

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Colorado, 1/10c on both; Florida, 1, 8c; Indiana, 2/25c; Kansas, 1/50c; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c; Missouri, 1/50c; Nebraska, 3/50 to 1/2c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 4/25c; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Bunker Oil Reduced at New York; Gasoline Market is Active

Staff Special
NEW YORK, May 5

IN CONTRAST with steadily advancing gasoline prices in Atlantic seaboard markets came a 10-cent reduction in posted prices for bunker oil this week.

The reduction to $1.25 a barrel f.o.b. refinery announced by the Standard Oil Co. of New Jersey effective May 5 was not altogether a surprise to the trade. Exceptionally low offers of large quantities of grade C oil over six months to a year recently at the Gulf had prepared eastern oil men for a readjustment in posted prices at New York.

The reduction came too late in the week to have any appreciable effect on the general burning oil market. With the domestic fuel season at an end, prices of furnace oil and gas oil have been more or less nominal the last two or three weeks. Sellers have been anxious to move goods which jobbers have failed to order out on contracts and consequently individual spot transactions have ranged widely.

Several large contracts for bunker oil were reported closed with steamship companies considerably under the posted market. The exact nature of the contracts could not be learned but it was generally believed price considerations were such as to influence considerably the posted-market reduction.

Exceptionally good demand for gasoline from jobbers was reported. Most refiners said contract commitments were being ordered out regularly and more spot buyers were in the market than for some time.

Jobbers willing to commit themselves over May were largely covered at 9.50 cents on an f.o.b. New York harbor basis late in April. The market since March 1 has advanced with such rapid strides that many jobbers apparently have felt a reaction was in order and for this reason have failed to protect themselves over May. As a result "distress buyers", as they have come to be termed, were more numerous.

The spot market for U. S. Motor gasoline at New York harbor opened April 30 and held all week at 9.75 cents. According to well informed dealers, this price was not being shaded even to favored customers. Further evidence of the exactness of a 9.75-cent market was seen in the fact that one or two resale agents who occasionally have low priced goods to offer, were quoting this figure as their minimum.

The first indication of a still higher market for June materialized late this week when one large refiner in the Philadelphia area advanced his spot price for U. S. Motor gasoline to 10 cents. Other sellers in the New York and Philadelphia markets indicated their prices might be advanced to this level early next week.

Goods were available at Philadelphia from at least one seller at 9.50 cents. He reported he had a fairly large volume of stuff he was willing to dispose of at this price in spite of the higher prices asked by other sellers.

The Baltimore market leveled to 9.75 cents for U. S. Motor gasoline and 10 cents for California U. S. Motor when one important seller advanced his prices 0.25-cent early this week. Weather south of New York has been conducive to motoring and gasoline consumption has increased rapidly. Jobbing demand has been active and spot orders have shown a steady increase, according to reports.

New England jobbers were more active buying both for spot and over-the-month shipment. U. S. Motor gasoline for spot delivery was quoted generally at 10 to 10.50 cents in the Boston and Providence districts. Slightly better prices were available for deferred delivery. One company reported purchasing approximately 500,000 gallons of U. S. Motor at 9.75 cents, f.o.b. shipping point, for shipment over the rest of May.

Kerosene was advanced by several companies in eastern markets this week. One refiner in the Philadelphia market increased his price for water white to 7.50 cents. Two other refiners continued to quote 7.25 cents.

At New York harbor, one large refiner who has maintained a nominal price of 7.50 cents for water white kerosene for several weeks reported he was again getting some spot business at this price and the range for this commodity was widened 0.5 cent. Water white was still available at 7 cents.

There was little demand for kerosene from Baltimore sellers but water white was largely quoted at 7.50 cents. They reported taking no spot business under this price.

Gulf Export Market is Quiet; Gasoline Quotations Shaded

Staff Special
NEW YORK, May 5

GASOLINE prices at the Gulf were the subject of much discussion, particularly prices of U. S. Motor and 64-66, 375 end point. Several refiners held to their list quotations of 8.75 cents and 9.50 cents, respectively, for these two grades whereas others were of the opinion that foreign buyers would be able to do at least 0.125-cent or more better.

Confirmation of their opinions was made with the purchase of a 50,000-barrel cargo by a French company for July 15-Aug. 20 loading. The inquiry originally called for approximately 8000 barrels of U. S. Motor and 42,000 barrels of 64-66, 375 end point gasoline. It was closed April 30 at 8.625 cents and 9.375 cents, respectively.

On chartering a ship the buyer found there would be sufficient space for about 5000 barrels of prime white kerosene which he then bought at 6.50 cents.

The fact that at least two suppliers bid 0.0625 to 0.125 cent under the foregoing prices for this cargo, after a firm offer had already been accepted by the buyer, led several of the trade to believe that lower prices could have been done.

It was admitted by the broker that negotiated the deal that 6.50 cents could have been shaded for the kerosene. To complete the loading of the ship at one port, however, the buyer was willing to pay the price asked by the supplier of the gasoline.

The rest of the week's activity in the gasoline market was confined to part cargo inquiries from French buyers. One company was seeking approximately 8500 barrels of 390 end point gasoline on a c.i.f. basis. Another buyer wanted approximately 8500 barrels each of U. S. Motor and 64-66, 375 end point gasoline.

The trade continued speculating regarding the immediate future of the export gasoline market. It was generally felt that foreign buyers would enter the market within the next 10 days or two weeks for July cargoes. Relatively little goods have been purchased for loading July and August.

With prices in the field pointing upward, most suppliers expressed the opinion that at least their current prices at the Gulf, if not higher ones, would have to be obtained for future business. At least two large refiners continued to say they were looking for 9-cent U. S. Motor at

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, represent majority of quotations and sales.)

	May 7	Apr. 30	Apr. 23
U.S. Motor gasoline, New York harbor	9.75	9.75	9.50
U.S. Motor gasoline, Philadelphia	9.50 –10.00	9.50 – 9.75	9.50
U.S. Motor gasoline, Boston district	10.00 –10.50	*10.25 –10.50	*10.25 –10.50
U.S. Motor gasoline, Providence district	10.00 –10.50	*10.00 –10.50	*10.00 –10.50
U.S. Motor gasoline, Baltimore	9.75	9.75	9.50
U.S. Motor gasoline, Norfolk	9.75	9.75	9.50
U.S. Motor gasoline †Wilmington, N. C.	†9.75	†9.75	9.50
U.S. Motor gasoline, Charleston	9.50	9.50	9.25
U.S. Motor gasoline, Savannah	9.00 – 9.25	9.00 – 9.25	8.75 – 9.00
U.S. Motor gasoline, Jacksonville	8.75 – 9.25	8.75 – 9.25	8.75 – 9.00
California U.S. Motor gasoline, New York Harbor	10.00	10.00	9.75
California U.S. Motor gasoline, Baltimore	10.00	10.00	9.75
California U.S. Motor gasoline, Philadelphia	9.50 – 9.75	9.50 – 9.75	9.50
Water white kerosene, New York Harbor	7.00 – 7.50	7.00	7.00
Water white kerosene, Philadelphia	7.25 – 7.50	7.25	7.00 – 7.25
Water white kerosene, Baltimore	7.50	7.50	7.50
28-34 gas oil, New York harbor	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
28-34 gas oil, Boston district	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
36-40 furnace oil, New York harbor	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
36-40 furnace oil, Boston district	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
Grade C bunker oil, New York harbor	$1.25	$1.35	$1.35
Grade C bunker oil, Boston district	$1.35	$1.35	$1.35
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.

MEDICINAL OILS

Russian 885-890 s.g., 325-330 vis.	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
Russian 870-875 s.g., 150-155 vis.	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
Russian 860-865 s.g., 80-85 vis.	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

***Nominal. †Only one refiner quoting.**

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	May 7	Apr. 30	Apr. 23
U. S. Motor gasoline	25.40	25.40	25.40
43-45 150 w.w. kerosene	18.40	18.40	18.40
42-44, 110 s.w. kerosene	17.40	17.40	17.40
CYLINDER OILS			
Bright stock, dark	33.50 –34.50	33.00 –34.00	32.50 –33.00
600 D filtered	31.00	30.00 –31.00	30.00 –31.00
600 Warren E filtered	23.50 –24.50	23.50 –24.50	23.50 –24.00
600 s.r. unfiltered	17.00 –17.50	17.00	16.75 –17.00
650 s.r. unfiltered	18.75 –19.50	18.25 –19.50	18 25 –19.50
600 flash s.r.	21.00 –21.50	20.50 –21.50	20.00 –21.00
630 flash, s.r.	32.00 –34.00	32.00 –34.00	32.00 –33.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.50 –20.00	19.50 –20.00	20.00
250 vis. No. 6 color	18.50 –19.00	18.50 –19.00	19.00
200 vis. No. 6 color	18.00 –18.50	18.00 –18.50	18.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	24.00	24.00	24.00
180 vis. No. 3¼ color	20.00	20.00	20.00
100 vis. No. 2¼ color	15.75	15.75	15.75
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	35.00	35.00	35.00
500 vis. No. 6½ color	33.00	33.00	33.00
400 vis. No. 7¼ color	31.00	31.00	31.00
300 vis. No. 6 color	30.00	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00	24.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)

WHITE CRUDE SCALE (In barrels)

	May 7	Apr. 30	Apr. 23
122-124 A.m.p.	4.00	3.75 – 4.00	3.625– 3.75
124-126 A.m.p.	4.00	3.75 – 4.00	3.625– 3.75
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.50	*4.25	*4.25
125-127 A.m.p.	4.50	*4.25	*4.25
128-130 A.m.p.	4.625	4.25 – 4.50	4.25 – 4.50
130-132 A.m.p.	5.00	4.50 – 4.75	4.50 – 4.75
133-135 A.m.p.	5.75	5.50 – 5.75	5.50 – 5.75
135-137 A.m.p.	6.25 – 6.50	6.00 – 6.25	6.00 – 6.25
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.75	3.375– 3.50	3.25 – 3.375

***Prices nominal.**

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	May 7	Apr. 30	Apr. 23
U.S. Motor	8.625– 8.75	*8.625	8.50 – 8.75
60-62, 400 e.p.	8.875– 9.00	8.875– 9.00	9.00
61-63, 390 e.p.	9.125– 9.25	9.125– 9.25	9.25
64-66, 375 e.p.	9.375– 9.50	*9.375	9.50
U. S. Motor, cases (cargoes)	$1.75	$1.75	$1.75
64-66, cases (cargoes)	$1.85	$1.85	$1.85

***Sales only.**

KEROSENE			
44 water white	7.25 – 7.50	7.25 – 7.50	7.50
41-43 prime white	6.25 – 6.50	6.25 – 6.50	6.50
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil.	3.875– 4.00	3.875– 4.00	3.75 – 4.00
*30-32 translucent gas oil.	4.00	....	....
Grade C bunker oil	$1.05 – 1.15	$1.05 – 1.15	$1.05 – 1.15
Grade C bunker oil, cargoes	$0.90	$0.90 – 0.95	$0.90 – 0.95

***Less than ½ of 1% sulfur.**

MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.05	$1.05	$1.05
Grade C bunker oil, for bunkering purposes, taxes paid	$1.15	$1.20	$1.20

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.; cold test 0) (Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00	6.00	6.00
200 vis. No. 3 unfiltered pale	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
300 vis. No. 3 unfiltered pale	9.25	9.25	9.00 – 9.25
500 vis. No. 3½ unfiltered pale	11.50 –11.75	11.75	11.00 –11.75
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200 vis. No. 5-6 red oil	7.00 – 7.50	7.50	7.00 – 7.50
300 vis. No. 5-6 red oil	8.00 – 8.50	8.50	8.00 – 8.375
500 vis. No. 5-6 red oil	10.00	10.00	9.50 –10.00
750 vis. No. 5-6 red oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
1200 vis. No. 5-6 red oil	14.50 –15.50	14.50 –15.50	14.00 –14.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 7	Apr. 30	Apr. 23
Gasoline, U. S. Motor, 53-55 Gravity	7.50 – 7.75	7.50 – 7.75	7.50
Gasoline, U. S. Motor, blends and special cuts	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
Gas Oil, 30-34, per barrel	$1.05 –$1.15	$1.05 –$1.10	$1.05 –$1.10
Diesel Oil, 27 plus, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18, per barrel	$0.75 –$1.00	$0.75 –$1.00	$0.75 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.70 –$1.80	$1.70 –$1.80	$1.70 –$1.80
Kerosene, 38-40 w.w., 125-150 flash	$1.35 –$1.45	$1.35 –$1.45	$1.35 –$1.45

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926-1927 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.80
Bradford District Oil in National Transit Lines (Bradford District)	2.80
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.60
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.35
Keister Grade in National Transit Lines (Butler Co)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.35
Corning Grade in Buckeye Pipe Lines (Ohio)	1.55
Corning, O. heavy grade	1.45
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.45
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines.....$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.57	Plymouth	$1.23
Lima	1.55	West Kentucky	1.33
Waterloo	1.20	*Canadian Petro.	1.95
Indiana	1.32	*Oil Springs	2.02
Princeton	1.50	*Posted by Imperial Oil Ltd.	
Illinois	1.50		

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Feb. 21, 1928

28-28.9	$0.96	41-41.9	$1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76
40-40.9	1.40		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective Feb. 21, 1928

Below 25	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

Humble Prices (Cont'd)

28-28.9	$0.96	37-37.9	$1.31
29-29.9	1.01	38-38.9	1.34
30-30.9	1.06	39-39.9	1.37
31-31.9	1.11	40-40.9	1.40
32-32.9	1.16	41-41.9	1.43
33-33.9	1.19	42-42.9	1.46
34-34.9	1.22	43-43.9	1.49
35-35.9	1.25	44 and above	1.52
36-36.9	1.28		
Mirando, Tex			$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Feb. 21, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 30	$0.75
30-30.9	0.90
31-31.9	1.05
Glasscock and Howard Counties	$0.60
Chalkfield (Howard Co.)	$0.80
Iatan district	$0.93
Corsicana heavy	$1.00

Carter Oil Co.

(Oklahoma and Kansas)

Feb. 21, same schedule as Prairie plus these grades:

24-24.9	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Feb. 21, 1928

Hutchinson and Carson Counties:

Below 31	$0.60	38-38.9	$0.88
31-31.9	0.65	39-39.9	0.91
32-32.9	0.70	40-40.9	0.94
33-33.9	0.73	41-41.9	0.97
34-34.9	0.76	42-42.9	1.00
35-35.9	0.79	43-43.9	1.03
36-36.9	0.82	44 and above	1.06
37-37.9	0.85		

Wheeler County:

Below 29	$0.60	37-37.9	$0.95
29-29.9	0.65	38-38.9	0.98
30-30.9	0.70	39-39.9	1.01
31-31.9	0.75	40-40.9	1.04
32-32.9	0.80	41-41.9	1.07
33-33.9	0.83	42-42.9	1.10
34-34.9	0.86	43-43.9	1.13
35-35.9	0.89	44 and above	1.16
36-36.9	0.92		

Gray County:

Below 27	$0.60	36-36.9	$1.02
27-27.9	0.65	37-37.9	1.05
28-28.9	0.70	38-38.9	1.08
29-29.9	0.75	39-39.9	1.11
30-30.9	0.80	40-40.9	1.14
31-31.9	0.85	41-41.9	1.17
32-32.9	0.90	42-42.9	1.20
33-33.9	0.93	43-43.9	1.23
34-34.9	0.96	44 and above	1.26
35-35.9	0.99		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23, 1927

Crane, Upton, Crockett and Pecos Counties...$0.60

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective Feb. 21, 1928

Below 28	$0.91	40-40.9	$1.40
28-28.9	0.96	41-41.9	1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76

Cotton Valley, below 36, $0.75. Rest of Cotton Valley schedule, beginning with 36-36.9 at $1.28, same as Caddo, Homer, etc.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La	.75
†East El Dorado	1.00

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6, by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp.

Below 28	$0.85	30-30.9	$0.91
28-28.9	0.87	31-31.9	0.93
29-29.9	0.89	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

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the Gulf before any material recession in prices would take place.

The foreign demand for gas oil was slightly better this week. Numerous tentative inquiries were reported in the market, most of them for shipment over four to six months.

A German buyer was inquiring for a cargo of 32 plus gas oil for August shipment which had not been closed up to May 5.

There was little change in prices for spot cargoes of grade C bunker oil, but purchases of large quantities for shipment over six months to a year were reported. One deal involving approximately 1,000,000 barrels of grade C for shipment over a year was reported closed. The price could not be learned but it was said by well informed sources to be considerably under $0.90 a barrel, f.o.b. the Gulf.

Prices of grade C for bunkering had not changed to the end of the week. Reductions are looked for early next week, however, in view of the 10-cent reduction made late this week in posted prices on the Atlantic coast.

Tanker Rates

NEW YORK, May 7.—Approximate tanker freight rates in the following trades are, to Continental ports, in shillings per ton of 2240 pounds, British Sterling; to American ports, cents per barrel:

	Crude &/or Fuel	Refined Oil
Calif. to U.K. or Continental ports*	29/-	30/-
Gulf to U.K. or Continental ports*	16/-	17/6
North Atlantic to U.K. or Continental ports*	13/6	14/6
Calif. to North Atlantic ports (not E. of N.Y.)	57c	80/85c
** Gulf to North Atlantic ports (not E. of N.Y.)	17½c	30/35c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading, 1c per bbl. additional. For Tampico loading, 4c per bbl. additional.

Gulf Lubes Continue Quiet

HOUSTON, May 7.—Quiet and unchanged conditions continue in the Gulf Coastal lubricant markets. No increased sales are reported above those regarded as seasonal. Manufacturers are increasing their sales effort and are looking forward to new business from the approaching motoring season.

Purchasers, in All Fields (in Effect May 7)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A.....$1.20	*Grades B.....$1.15
‡Grades B (light crude):	
35-35.9.....$1.37	38-38.9.....$1.43
36-36.9..... 1.39	39-39.9..... 1.45
37-37.9..... 1.41	40 and above.... 1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Feb. 21, 1928)

‡Salt Creek below 29	$0.96
" " 29-29.9	1.01
" " 30-30.9	1.06
" " 31-31.9	1.11
" " 32-32.9	1.16
" " 33-33.9	1.19
" " 34-34.9	1.22
" " 35-35.9	1.25
" " 36-36.9	1.28
" " 37 and above	1.31
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.50
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	.85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.95	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

Refiners' Supplies

	May 7	Apr. 30
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, ...cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, ...cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, ... cwt.	$0.70-0.75	$0.70-0.75
Sal Soda wks.....	$0.90-1.10	$0.90-1.10
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton.....	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of.....cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks.....lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	$8.50	$8.50

Compounders' Supplies

Vegetable Oils		
Linseed carloads, spot.....lb.	10.20	9.60-9.80
Tanks, spot.....	9.40	8.80-9.00
Soya Bean, Tanks, coast, lb.	*9.50	*9.50
Oleic Acid		
Distilled, tanks.....lb.	8.75	8.75
Distilled, bbls.....lb.	9.50	9.25
Saponified, tanks.....lb.	9.25	9.25
Saponified, bbls.....lb.	10.00	9.75
Lard Oils		
Prime Winter Strained,...lb.	16.00	16.00
Extra Winter Strained,...lb.	13.00	13.00
Extra,.....lb.	12.50	12.50
Extra No. 1.....lb.	12.00	12.00
No. 1.....lb.	11.75	11.75
No. 2.....lb.	11.25	11.25
Tallow oil.....lb.	11.50	11.50
Neatsfoot Oil		
Pure, bbls.....lb.	15.75	15.75
Extra, bbls.....lb.	12.25	12.25
No. 1, bbls.....lb.	12.00	12.00
Cold Pressed.....lb.	18.50	18.50
Fish Oils		
Menhaden Oil		
Light Pressed.....gal.	60-61	60-61
Light Pressed, tank cars, N. Y. .....gal.	52	52
White bleached.....gal.	65-66	65-66
Yellow bleached.....gal.	63-64	63-64
Whale, extra winter bleached, ...gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y. .....gal.	51	52
Steam distilled turpentine, Savannah..... gal.	46	47
Gum turpentine, N. Y....gal.	55	55
Gum turpentine, f.o.b. cars Savannah .....gal.	50.50	50.50
Wood Rosin F, N. Y.....bbl.	$7.80	$7.55
Wood Rosin F, Savn'h...bbl.	$7.00	$6.75
Gum Rosin B, N. Y.....bbl.	$7.80	$7.90
Gum Rosin B, f.o.b. cars Savannah .....bbl.	$7.05	$7.20
Rosin oil, pure,.....gal.	48	48
Rosin oil, compounded...gal.	39	39
Pine Tar		
Kiln burnt,.....bbl.	*$13.00	*$13.00
Retort .....bbl.	$16.00	$16.00
Alcohol		
Denatured, Formula 5, in bbls., per gal.....	50-54	50-54

*Nominal.

Price of U. S. Motor Gasoline Reaches 7 Cents at Chicago

Staff Special
CHICAGO, May 5

GASOLINE prices, which have been advancing slowly for three months, this week reached the 7-cent level. This is the first time in nine months that U. S. Motor gasoline has sold as high as 7 cents and, with the exception of about six weeks last summer, it is the first time since March, 1927.

The lowest point reached in more than a year was last January when *Platt's Oilgram* showed 5.625 to 5.875 cents as the market range. Scattered sales as low as 5.50 cents were reported at that time.

U. S. Motor opened at 6.875 to 7 cents last Monday, and Tuesday virtually no goods could be obtained below 7 cents. This price predominated until Friday and Saturday when a considerable portion of the trade advanced prices to 7.125 and 7.25 cents.

Demand was good all week while the 7-cent price prevailed and those sellers who advanced to 7.125 and 7.25 cents late in the week, reported no falling off in business. Two or three refiners reported that they sold more gasoline this week than in any previous week this year.

Several factors combined to bring the market to its present high level, it is said. Temperatures were abnormally high, at one time reaching 90 degrees in Chicago. Roads are considerably improved. Many refiners refused to sell goods for delivery over May and this resulted in heavier buying on the spot market.

Another bullish factor was the report that major gasoline distributors in Chicago were contemplating the elimination of the 1-cent discount to dealers for 100-gallon dumps. It was believed that this would discourage price cutting.

Report was current in Chicago Saturday that the tank car price of U. S. Motor gasoline in Ohio had been raised to 11 cents delivered, without tax. This would net back something, at least 7.25 cents f.o.b. Group 3 and enable Oklahoma refiners to move their goods into Ohio without making a special Ohio price.

Exporters continued to inquire for high test gasolines and this along with the advancing U. S. Motor gasoline market helped to strengthen the higher gravities. Prices on all grades advanced approximately 0.375 cent during the week.

Gasoline of 60-62, 437 e.p. was 6.875 to 7.125 cents April 30, 7 to 7.125 cents May 1 and 2; 7.125 cents flat May 3 and 7.25 cents flat May 5. The 60-62, 400 e.p. grade moved at 7.125 to 7.25 cents, April 30; 7.25 cents flat May 5 when it was 7.375 to 7.50 cents. Bulk of 64-66, 375 e.p. gasoline sales were reported at 7.50 to 7.75 cents May 5 after moving at 7.375 to 7.50 cents most of the week. Sales were reported April 30 at 7.25 cents.

Several sellers reported an active demand for kerosene. Others said their business was just about normal for this season. One or two sellers reported that a few orders were for rush shipment. Sales of 41-43 w.w. kerosene were at 5 to 5.25 cents Monday and Tuesday. By Wednesday little 5-cent kerosene was available and the bulk of goods moved at 5.125 to 5.25 cents where it remained the rest of the week. A few sellers reported getting 5.375 cents late in the week.

Little demand was noted for distillate by most of the trade but two or three refiners reported a fair demand. One seller reported selling seven cars of 38-40 straw May 4 at 3.25 cents. Bulk of sales were at 3 to 3.25 cents.

Gas oils were in steady demand. Industrial buying was said to be about normal. Prices of all grades were unchanged. The 32-36 ordinary dark gas oil sold at 2.625 to 2.75 cents with some sales reported at 2.50 cents. Dark gas oil with a zero cold test continued to sell at 2.75 to 2.875 cents. The 32-36 straw zero sold mostly at 2.875 to 3 cents.

Demand for fuel oils for spot shipment was quiet. Most sellers reported that contract goods were moving fairly well. Prices of all grades were approximately 2.50 cents lower May 5. The trade reported that more west Texas fuel oil was coming into the Chicago territory but not enough to have much effect on Oklahoma fuels.

The 28-30 fuel oil moved mostly at $1 to $1.075 a barrel April 30 and May 1; at $1 to $1.05 May 2 and at $0.975 to $1.05 the rest of the week. Fuel oil of 24-26 gravity sold at $0.825 to $0.875 through May 2 and at $0.825 to $0.85 thereafter. The 22-26 fuel oil sold at $0.825 to $0.875 the first half of the week and at $0.80 to $0.85 the latter half. Fuel of 18-22 gravity moved at $0.75 to $0.825 from May 3 after being at $0.775 to $0.85 before. Quotations and sales of Smackover treated fuel were mostly at $0.875 to $0.925 the first three days and at $0.875 to $0.90 thereafter.

Mostly fair with temperatures near normal first half of next week in Standard of Indiana territory. Some precipitation with slightly higher temperatures in the latter half of the week.

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Further Price Advances Made in Pennsylvania

CLEVELAND, May 5.—Further price advances were recorded in the western Pennsylvania market this week.

After mid-week 58-60 U. S. Motor gasoline was quoted at 9.50 to 9.75 cents. Several refiners in the Pittsburgh district were asking 10 cents.

Light bright stock ended the week at 29 to 30 cents as against a 28 to 29-cent market earlier. Wax, 124-126 A.m.p., was 4 cents and 122-124 A.m.p. 3.875 to 4 cents. Fractional advances were made in other goods.

Gasoline demand, on the whole, has been good. One Pittsburgh district refiner said he had the best week of any similar period in two years. Some sellers reported heavy over-the-month buying had taken some jobbers out of the spot market.

Light bright stock was in active demand. Wax was scarce.

NEW YORK, May 5.—R. M. Parker, Jr., Acewood Petroleum Co., New York City, left Sunday on a short business trip to Tulsa.

OIL STOCKS AND FINANCES

National Petroleum News

Only Two of 15 Companies Show Larger Profits First Quarter

CLEVELAND, May 5

IN THE last two weeks first quarter earnings statements of 15 oil companies have been issued. Only two companies report earnings in the first three months of 1928 as large as those in the corresponding time of 1927. These companies are the Atlantic Refining Co. which operates on the Atlantic seaboard and the Richfield Oil Co. which operates on the Pacific coast.

Only two other companies came $100,000 or more of equalling their 1927 first quarter earnings. These two were the Union Oil Co. of California and the White Eagle Oil & Refining Co.

Net earnings of other companies fell greatly or losses were larger than a year before.

The income reports reflect the continued low crude and refined oil prices. The improvement in prices in the refinery markets the last two months had little effect on earnings because of the low prices that preceded them.

The report of the Atlantic Refining Co. makes the best showing. This company lost $2,679,758 on its operations in the first quarter of 1927. It profited after all charges, including reserves, $1,357,357 in the first quarter of 1928, a gain of $4,037,115. The 1928 first quarter was the best first quarter the company has had in five years.

J. W. Van Dyke, president, at the company's annual meeting in Philadelphia May 1 reviewed conditions last year when inventory values fell sharply and added:

"Present conditions are very different from those of a year ago. While crude oil prices are still at the lowest and are undoubtedly quite below true costs of production for adequate supplies, and while product prices are influenced accordingly, the trend is toward higher levels, thus rendering it possible for the business of the company to be normally conducted. In consequence, earnings for the first quarter of the year (January to March inclusive) are recorded at $1,357,000, compared with a loss for the corresponding quarter of 1927 of $2.680,000 and profits of $35,000, $843,000 and $1,273,000 for the first quarter of the years 1926, 1925 and 1924 respectively.

"In considering these figures it should be kept in mind that the early months of 1927 were the worst of the year and that, consequently, it cannot be anticipated that earnings for the second, third and fourth quarters of 1928 will show improvement over the corresponding 1927 periods in anything like the proportion recorded for the first quarter.

"It is our hope, however, that the nine months still to be accounted for in the present year will yield better returns than did the same months last year. This hope is based in part upon reductions in operating expenditures which are being realized, in part at least, from expenditures made in 1926 and 1927 for improvements in plant and facilities.

"As an approximate comparison we will mention that, although thus far in 1928 the company has produced more crude oil, has processed greater gallonage at its refineries and has marketed somewhat larger quantities of products than during the same months of 1927, its cash outlay for operation expenses of all kinds, including payroll (but excluding cost of raw materials) was in the three months under review $944,000 less. As a form of expression, therefore, it may be said that dividends on the common stock during 1928 may be looked for as available from savings in operating expenditures."

The reports of producing companies emphasize the low prices received for crude oil. Phillips Petroleum Co.'s earnings before reserves were cut by more than half. Amerada Corp.'s net after reserves and other charges were approximately one half lower.

Some of the companies with refining divisions suffered greatly. Skelly Oil Co. netted only about one-eighth as much in the first three months as it did in the corresponding time of 1927. Texas Pacific Coal & Oil Co. reported earnings before reserves that were only about 60 per cent of the earnings in the first quarter of 1927. Independent Oil & Gas Co.'s income slumped more than $1,000,000.

In some cases the poorer results were in face of larger operations. Simms produced an average of 13,919 barrels of crude a day, compared with 9918 barrels daily a year before. Its refinery ran 5651 barrels of crude daily as against 3888 barrels average the first three months last year. Its production in the Yates pool was held to 2700 barrels daily under the proration agreement but the potential was much larger.

E. B. Reeser, president of Barnsdall, issued this statement:

"The depression in the petroleum

(*Continued on Page* 134)

Oil Company Earnings

First Quarter	1928	1927
Amerada Corp.	$559,893	$1,165,674
Atlantic Refining	1,357,357	*2,679,758
Darby Petroleum	204,875	.....
Houston Oil	337,862	680,895
Independent Oil & Gas	*419,398	634,530
Phillips Petroleum	†3,105,091	†6,804,719
Simms Petroleum	*168,010	*136,219
Skelly Oil	69,085	567,261
Texas Pacific Coal & Oil	†394,080	†693,936
Richfield Oil Co.	$1,390,517	$738,014
Barnsdall Corp.	385,460	955,599
Marland Oil Co.	*1,876,992	228,692
Union Oil Co.	2,500,000	2,600,000
White Eagle O. & R.	306,903	388,007
Pierce Petroleum	*34,265	*129,496

*Loss. †Before depreciation and depletion.

MOUNTAIN PRODUCERS CORPORATION

We have available for distribution a descriptive circular regarding this company.

CARL H. PFORZHEIMER & CO.

Specialists in Standard Oil and Miscellaneous Oil Securities

25 Broad Street New York

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 5 Sales	First	High	Low	Last	Change
37⅞	27⅜	38	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 28	31,700	37½	37¾	34½	35⅛	— 1⅝
82½	35⅜	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....	.....	29,600	77⅝	83	74	79¼	+ 2⅛
50¼	35	46½	37½	$56,000,000	$ 25	Associated Oil	50cQ	Mar. 31, 28	930	41⅞	*46½	41⅞	44	+ 2
131⅜	104	139⅞	95¾	50,000,000	100	Atlantic Refining	$1Q	Mar. 15, 28	63,900	133½	*139⅞	132	134¾	+ 1¾
119	115½	118¼	116	20,000,000	100	do pfd	$1.75Q	May 1, 28	.....	.....	.....	.....	.....	.....
35½	20¾	26⅞	22⅛	28,725,675	25	Barndsdall Corp. A	.....	Feb. 6, 28	66,800	26½	*26⅞	25¾	25¾	— 1¼
32½	20½	27¼	22	799,775	25	do B	.....	Feb. 6, 28	200	27¼	*27¼	26⅞	26⅞	+ ⅜
32⅞	20	32½	24	51,524,150	25	California Petroleum	25cQ	Mar. 1, 28	2,700	31⅞	*32½	30⅞	32	+ ½
96¾	65	94⅞	71¼	20,785,400	100	General Asphalt	.....	.....	59,300	93	*94⅞	88¾	89½	— 1
144⅞	107¼	141½	114	6,792,200	100	do pfd	$1.25Q	Mar. 1, 28	2,700	136	*141½	136	138½	+ 3½
175⅝	60⅛	167	127	25,000,000	100	Houston Oil	.....	.....	9,700	153	155⅜	144	146	— 5¼
32⅝	17⅝	31⅞	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	May 7, 28	53,200	30¼	*31⅞	28½	28¾	— 1¼
12⅛	7⅝	19½	9	$3,280,340	$10	Indian Refining	.....	Dec. 15, 20	45,500	18⅞	*19½	16½	17⅝	+ 1
12	7¼	18½	8⅛	4,550,110	10	do ctfs	.....	.....	40,200	18	*18½	16	16½	+ 2
112	99	127	101	2,296,400	10	do pfd	.....	Dec. 15, 21	3,600	120	*127	120	127	+11½
37¾	20½	39⅛	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	75cQ	May 1, 28	17,400	37¼	*39⅛	36⅝	36⅝	— ¼
18⅜	10	19¾	9⅜	(sh) 1,136,500	N.P.	Louisiana Oil Refining	.....	.....	88,000	19⅝	*19¾	17⅛	17½	— 1⅜
97	85¼	96	80	$4,000,000	$100	do pfd	$1.50Q	Feb. 15, 28	260	96	*96	93	93¾	+ ⅞
22¾	12	25½	12½	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	14,100	23	23	18¾	20⅛	— 2⅞
58½	31	44½	33	(sh) 2,316,692	N.P.	Marland Oil Co.	.....	Mar, 31, 27	64,500	43½	44⅛	41⅜	41¼	— 2½
320	200	360	255	$45,942,800	$100	Mexican Petroleum	$3Q	Apr. 20, 28	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Apr. 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	35	4⅝	(sh) 945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	229,500	34⅝	*35	28½	32⅜	— 1⅛
39⅜	25½	33¼	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	46,200	33⅛	33¼	31¼	31½	— 1⅜
105	97	109	103¼	$6,718,000	$100	do pfd	$1.75Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
3¾	1⅝	5⅞	2⅜	24,298,850	10	Middle States	.....	July 1, 23	47,300	5	5⅛	4⅝	5	0
2¾	1⅜	4	1½	5,501,370	10	do ctfs	.....	.....	5,900	3¾	3¾	3¼	3½	— ⅛
1⅞	1	2¼	1¼	(sh) 3,500,000	N.P.	Pacific Oil	.....	.....	141,800	2	2	1⅝	1¾	— ¼
65⅞	40⅛	53¾	38¼	$48,807,400	$ 50	Pan American P. & T.	.....	Oct. 20, 27	3,300	53	*53¾	50¼	50⅞	— 1⅜
66⅝	40¼	54⅝	37¾	121,097,900	50	do B	.....	Oct. 20, 27	85,400	54	*54⅝	50⅞	51¼	— 1¾
37⅞	16¾	28⅜	18¼	(sh) 400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	19,800	28⅜	28⅜	25¾	26	— 2
18⅞	8	21⅜	11½	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	8,600	20⅞	20⅞	18¼	18¼	— 2
83	54	95	70	$2,935,200	$100	do pfd	.....	July 2, 23	1,800	85	*95	85	94	+ 9
60¼	36¼	44⅝	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½cQ	Apr. 2, 28	34,700	44⅜	*44⅝	41½	42¼	— 1⅜
1⅜	½	3⅞	½	$29,622,925	$ 25	Pierce Oil Corp.	.....	.....	95,200	3⅝	*3⅞	2½	3⅜	— ¼
24	13½	30½	16¼	15,000,000	100	do pfd	.....	Feb. 1, 22	1,200	28	28	23¼	23¼	— 5½
5½	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	41,800	5⅞	5⅞	4⅝	4⅝	— 1¼
33⅞	16⅜	26⅞	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	15,600	26⅞	*26⅞	23¾	24⅛	— 2½
50	36⅞	46⅞	41	2,845,350	50	do pfd	.....	May 1, 25	920	45	*46⅞	43⅞	44	— ½
33½	25	27½	19	75,959,250	25	Pure Oil Co.	12½cQ	Mar. 1, 28	31,800	25⅞	26¼	25⅛	25½	0
115½	111⅝	113⅞	108	13,000,000	100	do 8% pfd	$2Q	Apr. 1, 28	520	112½	113⅞	112½	113⅞	+ ⅞
28⅝	25⅜	46½	24	$29,224,894	$25	Richfield Oil	25cQ	May 1, 28	370,900	44⅞	*46½	43¾	46	+ 1⅞
54½	44¼	54¾	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.343	Jan. 28, 28	12,700	54	54	52¼	52¼	— 2⅝
47⅞	41⅜	47	40⅝	(sh) 77,590	£2	Shell Transport & T.	97c	Jan. 23, 28	300	46¼	*47	46¼	47	+ ⅞
31⅜	24⅝	31	23¼	(sh)10,000,000	N.P.	Shell Union Oil	35cQ	Mar. 31, 28	59,300	29	*31	29	29⅝	+ ⅜
26⅝	14¼	24⅜	18⅛	$7,208,080	$ 10	Simms Petroleum	.....	Apr. 1, 27	23,200	24⅛	24¼	22½	22⅝	— 1¼
22⅝	15	30¼	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	.....	May 31, 24	198,800	30	30¾	28	28⅛	— 1⅞
104½	97	109½	102½	$16,604,600	$100	do pfd	$2Q	Feb. 15, 28	200	109½	109½	108½	108½	+ 1
37⅜	24⅛	34	25	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 28	142,800	33	*34	31⅜	31⅜	— 1
60¾	50⅜	63⅞	53	(sh)13,016,434	N.P.	S. O. California	62½cQ	Mar. 15, 28	187,100	62⅞	*63⅞	61¼	61⅜	— ⅞
41⅜	35⅛	49	37⅝	$607,910,525	$ 25	S. O. New Jersey	‡25cQ	Mar. 15, 28	342,600	47¼	*49	45¼	45¾	— 1¼
34⅛	29¾	41¼	28¾	427,973,275	25	S. O. New York	40cQ	Mar. 15, 28	718,600	40	*41½	38¼	39⅛	— ⅝
34⅞	30	48	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	Mar. 15, 28	17,000	44⅝	*48	44½	48	+ 3½
101⅝	99	109½	100	$5,000,000	$100	do pfd	$1.50Q	Mar. 1, 28	200	109	109	109	109	+ ½
6½	3⅛	5⅞	2½	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	84,000	4⅞	*5⅞	4¼	5⅞	+ 1⅜
58	45	64⅞	50	$180,480,550	$ 25	The Texas Corp.	75cQ	Apr. 2, 28	249,500	62½	*64⅞	62	63½	+ 1¼
18⅞	12	17½	12½	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	82,600	16⅜	*17½	15⅜	15⅜	+ ⅝
29⅛	19	26½	19⅜	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 28	7,000	26¼	*27	26⅛	26½	+ ½
90⅛	85	94½	87	$20,705,200	$100	do 5½% pfd	$1.25Q	Feb. 15, 28	1,600	93¼	*94½	93¼	94½	+ 2
19⅛	15¾	20⅝	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	61,600	20½	20¾	19¼	19¾	— ½
90¾	85	90	82⅛	$72,745,900	$100	do pfd	$1.50Q	Apr. 2, 28	2,800	89¼	*90	89	89½	+ ¾
10⅝	3¾	10⅛	7¼	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	169,800	10	10	8¼	8¾	— 1⅛
56½	39⅝	57	42¾	$40,791,225	$ 25	Union Oil of California	50cQ	Feb. 10, 28	16,400	55⅜	55¾	53½	52½	— 1½
127½	94	126½	119⅛	30,844,000	100	Union Tank Car Co.	$1.25Q	Mar. 1, 28	600	124¼	*126½	124	126½	+ 1¾
34½	24½	33½	26	(sh) 310,956	N.P.	Warner Quinlan	50cQ	Apr. 1, 28	30,400	32½	33⅜	31⅛	31½	— ⅝
27½	20	26	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	25cQ	Apr. 20, 28	20,800	24⅜	*26	24⅜	25	+ ½

*New High †New Low ‡Also extras s-Stock Total Sales 4,176,430

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended May 4 Sales	First	High	Low	Last	Change
9⅞	6⅞	9½	7½	$ 10	Arkansas Nat. Gas..	6,091	8¼	8⅜	8⅛	8¼	0
98¾	80⅞	97¾	90¾	100	Columbia Gas.....	118	105	112	105	112	...
107⅞	100	108	108	100	do pfd.....	.....	...	...	...	...	.....
15	7½	10	7	10	Devonian Oil.....	600	9	10	9	9⅞	+ ⅜
....	....	15	9¾	10	Dixie Gas & Util.....	215	13	14	13	14	0
....	....	95	88	100	do pfd.....	50	88	89	88	89	— 6
117½	115	116	115	100	Duquesne Light pfd	.....	....	....	....	....	.....
....	....	85	80½	100	Fayette County Gas.	.....	....	....	....	....	.....
12¼	6	22	12	N.P.	Houston Gulf Gas..	.....	....	....	....	....	.....
59¼	37¼	58	48⅝	$ 25	Lone Star Gas.....	25,061	48⅝	53⅜	†48⅝	52½	+ 3¾
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas	50	3½	3½	3½	3½	+ ¼
8	5⅜	7¼	6⅜	10	Salt Creek Cons.....	111	6½	6¾	†6⅜	6⅜	— ⅜
26½	17	20½	16⅝	10	Tidal Osage.....	.....	....	....	....	....	.....
43	33	33¼	30½	N.P.	Waverly Oil Wks. A	50	30½	30½	30½	30½	0

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended May 4 Sales	First	High	Low	Last	Change
....	....	2	1¾	....	Arkansas Gas Corp..	9,505	1⅞	2	1⅞	2	+ ¼
....	....	9	7½	....	do pfd.....	49	8	8	7½	7½	0
95	88	....	....	25	Gulf Oil.....	.....	....	....	....	....	.....
....	....	115	115	....	Houston Gulf Gas pfd.	.....	....	....	....	....	.....
10¾	5½	7⅞	5½	25	Leonard Oil & Dev.	.....	....	....	....	....	.....
2.70	.30	1.00	.50	10	Omar Oil & Gas....	.....	....	....	....	....	.....
2¼	1¼	....	....	5	Pittsburgh Oil Dev.	.....	....	....	....	....	.....
31	19	22	16¾	5	Plymouth Oil.....	2,250	20½	*22	20½	22	+ 1½
6	5	4½	4½	5	States Oil.....	.....	....	....	....	....	.....
3¼	1½	4½	2¼	1	Texon Oil & Land...	6,620	4⅛	*4½	4⅛	4½	+ ½
23¾	18	18	15	10	Tidal Osage Non-vgt.	.....	....	....	....	....	.....

*New High †New Low xEx Dividend.

Cleveland Stock Market

May 4	Par Value	Bid	Asked	Last Sale
Canfield Oil Co., pfd....	100	99	...	100
Fred G. Clark.....	10	3½	5	3½
National Refining Co....	25	x35½	40	35¾
do pfd.....	100	130	135	131
Paragon Refining Co....	25	13⅜	13⅞	13⅜
do pfd.....	100	121	130½	130

Oil Dividends

	Amount	Payable	Stock of record
Illinois P.L. s.a.....	$6.00	June 15	May 14
S.O. Ohio pfd. q.....	$1.75	June 1	May 11
S.O. California q.	62½c	June 15	May 15
Union Tank Car q	$1.25	June 1	May 16
Vacuum Oil q.	75c	June 20	May 31

Oil Company Earnings

Annual	1927	1926
Standard of New York.....	$11,414,887	$32,776,302
Shell Union Oil.....	11,344,914	31,518,965
Darby Petroleum.....	415,585	.....
Mexican Seaboard.....	*2,232,246	*2,134,642

*Loss.

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 4 Sales	First	High	Low	Last	Change
21⅝	17⅞	22⅜	18½	£ 4,126,460	£ 1	Anglo-American Oil	60⅓c	May 31, 27	5—900	20	20⅜	19⅞	19⅞	— 1/8
21½	17⅜	20½	17⅞	.....	£ 1	do cts. non-voting	.....	.....	400	19⅜	19⅞	19½	19½	+ 1/2
3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	7,800	4¼	5	3	3⅛	— 1⅛
6½	2½	9¾	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	1,000	9¾	*9¾	7	7	— 2⅜
69	50	56	49	1,000,000	25	Borne Scrymser	‡$1S.A.	Apr. 16, 28	100	53	53¾	53	53¾	+ ¾
60	45	76	58	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 28	400	73¾	73¾	73	73	— ¾
126	76½	161	117¼	3,000,000	25	Chesebrough Mfg	$1Q	Mar. 30, 28	400	160	160	153	153	— 1
22⅜	16¼	23	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	2,400	18⅝	20	18⅝	18¾	— ⅝
137	89	105	88	3,000,000	100	Cumberland Pipe Line	$2Q	Mar. 15, 28	100	104	104	103⅞	103⅞	+ ⅛
68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	May 1, 28	250	85¾	85¾	84½	84½	— 1
13½	3½	11	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	400	9	9	9	9	— ½
59¾	23	39	27	4,000,000	100	do new pfd	.....	June 30, 26	30	35¼	35¼	35¼	35¼	+ 2¾
60½	35⅛	48	35	2,000,000	100	do old pfd	.....	June 30, 26	50	47	47	47	47	+ 1
68½	54	79	60	73,117,577	25	Humble Oil & Refining	‡30cQ	Apr. 1, 28	62,600	80⅞	84⅞	77½	80⅞	— 3¾
182	123¾	214½	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 27	1,000	211	212	208	210	— 1
64¾	37¾	67¼	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 28	13,300	64¼	*67¼	64	67¼	+ 3
94½	61	89½	74⅞	$5,000,000	$ 50	Indiana Pipe Line	†$1Q	Feb. 15, 28	500	87¾	87¾	86	87	— 1
39	28¼	43½	35	(sh) 17,123,444	N.P	International Petroleum	25c	Mar. 15, 28	56,600	41½	43¼	41¼	42⅛	+ 1
24	13¼	32⅛	20½	$6,363,350	12.50	National Transit Co	25cQ	Mar. 15, 28	4,200	30⅜	30½	30	30	— ⅜
44⅛	31¼	57½	37½	5,000,000	100	New York Transit	.....	July 15, 26	1	57½	57½	57⅛	57⅛	0
100	70	125	94	4,000,000	100	Northern Pipe Line	‡$3S.A.	Jan. 1, 28	250	121	121	121	121	0
67⅛	52	67	58	60,000,000	25	Ohio Oil Co	‡50cQ	Mar. 15, 28	14,100	65⅞	*67	65	65¼	— 1¼
39	12	84	29	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	24,400	79⅛	84	64	66	—13½
190	132	223	184	81,000,000	100	Prairie Pipe Line	$2.50Q	Apr. 30, 28	4,100	216½	217	210	215	— 1¾
55½	45⅝	56	47⅜	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	39,000	54¾	*56	52½	53⅜	— 1½
201½	175½	186	167	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 27	.....	.....	.....	.....	.....	.....
27¼	15½	33⅓	21	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	600	32⅞	33	32⅞	33	+ ⅛
41¾	35	53	36¾	20,00,000	25	South Penn Oil	50cQ	Mar. 31, 28	8,300	52¼	53	50½	50½	— 1
83	55¼	99	70	3,500,000	100	South West Pa. Pipe Lines	‡$1Q	Apr. 2, 28	400	96	*99	96¾	99	+ 5
81¼	64⅜	83⅝	70⅞	228,415,463	25	S. O. Indiana	‡62½cQ	Mar. 15, 28	88,400	80	83⅝	80	80⅛	— ⅛
20⅞	14⅜	27⅜	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	3,300	24	24½	23½	23⅜	+ ⅛
130	111½	136⅛	122¼	17,012,559	25	S. O. Kentucky	$1Q	Mar. 31, 28	4,800	131⅜	134½	131⅜	132⅞	+ ⅜
49½	40	45⅞	39⅞	4,559,850	25	S. O. Nebraska	63cQ	Mar. 20, 28	800	44⅞	*45⅞	44⅜	44⅜	— ¼
87½	72	79½	71	14,000,000	25	S. O. Ohio	62½cQ	Apr 2, 28	2,900	77	79½	77	78⅛	+ 3
122	117¼	125	117	7,000,000	100	do pfd	$1.75Q	Mar. 1, 28	60	125	125	122½	122½	+ 1¼
21	14½	26	16	30,734,000	25	Swan Finch Co	.....	Nov. 1, 19	250	18¼	19	18¾	19	+ ¾
.....	.....	86	75	124,941,600	25	Vacuum Oil	75cQ	May 31, 28	94,200	151⅞	*86	†75	87	+10⅞

*New high †New low xEx dividend ‡Also extras.

New York Curb Bonds

Week Ending Mary 4

	High	Low	Last	Change
Beacon Oil 6s '36	106½	106	106	— ½
Cities Serv. 5s '66	97⅞	97⅝	97¾	— ⅛
Cities Serv. 6s '66	104⅛	104	104	0
Cities Serv. G 5½s '42	96⅝	96½	96½	— ⅛
Cont. Oil 5¼s '37	97¾	97¼	97¼	— ½
Galena Oil 7s '30	95	94	95	+ ⅛
Gulf Oil 5s '37	101⅞	101¼	101¾	0
Gulf Oil 5s '47	102	101⅝	102	+ ¼
Independent Oil 6s '39	106	103½	104	+ ¼
Richfield Oil 6s '41	134¾	122¼	134½	+ 4½
Sun Oil 5½s '39	102¼	102	102	0
Trans. Con't. Oil 7s '30	111	107	107¾	— 2
Valvoline Oil 7s '37	105¼	105¼	105¼	— ¾
Warner Quinlan 6s '42	104¾	103⅞	104¾	+1¾

New York Bonds

Week Ending May 4

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	103¼	102½	102½	0
Atlantic Refg. deb. 5s	103	102¼	102¼	0
Barnsdall Corp. 6s	106	105	105¾	+ ⅞
Barnsdall Corp. 8s ex-war.	93⅛	92⅜	93	+ ½
Cal. Pet. 5s	101⅜	100	101	0
Cal. Pet. 5½s	103	102¾	102⅞	0
General Asphalt 6s	113¼	111⅞	112¾	+1⅛
General Petroleum 5s	101¾	101½	101¾	+ ⅛
Humble Oil & Refg. 5½s	102½	102	102½	+ ¼
Humble Oil 5s	1u1	100¾	101	+ ¼
Mid-Cont. Pet. 6½s	106	105½	105½	0
Pan. Amer. P & T 7s	104⅜	104⅛	104⅛	— ⅝
Pan Amer. P & T 6s	105	104⅛	104½	— ½
Pan Amer. P & T 6s	96¾	96	96¼	— ¼
Pierce Oil deb. 8s	104½	101½	104½	0
Prod. & Refg. 8s	110⅛	110⅛	110⅛	— ⅞
Pure Oil 5½s	100⅛	99½	100⅛	+ ⅝
Simms Pet. cvt. 6s	107½	106½	106½	— ½
Sinclair Con. Oil 7s	103¼	102⅞	103	— ¼
Sinclair Con. Oil 6½s	101¼	101	101⅛	— ⅛
Sinclair Con. Oil 6s D	99¼	98½	99	0
Sinclair Crude Oil 5½s	99¼	98¼	98¾	0
Sinclair Pipeline 5s	96¾	95¾	96¼	+ ½
Skelly Oil 5½s	94¾	94⅜	94½	0
S. O. N. Y. 4½s	98¼	91½	98	+ ¾
S. O. N. J. deb. 5s	103½	103¼	103¼	— ¼
Superior Oil 7s	104⅛	104⅛	104⅛	+1⅛
Union Oil of Calif 6s A	112⅛	112	112	+ ⅜
Union Oil of Calif 1st 5½s	102	102	102	+2
Union Oil of Calif 1st 5½s	99⅞	99¾	99⅞	+ ⅛
White Eagle 5s C	98⅞	97½	98	+ ½

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended May 4 Sales	First	High	Low	Last	Change
2⅞	.55	1½	.75	$ 5	Amer. Con. Oilfields	33,000	.94	.96	.85	.93	+ 1
7½	2¾	6⅜	3½	N.P.	Amer. Maracaibo	25,600	4⅜	*6⅜	4¼	6½	+ 2⅛
2⅜	1	4	2¼	$ 10	Argo Oil	500	3	3¼	3	3	+ ⅛
9¾	6¾	9⅞	7⅝	10	Arkansas Nat. Gas	200	8⅜	8⅜	8	8	— ⅜
20½	15½	.....	.....	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
40	20½	40	32¾	N.P.	British American	1,300	38	*40	38	40	+ 2
28¼	15½	23⅞	18½	25c	Carib Syndicate(new)	8,700	20½	23½	20½	22⅛	+ 1¼
26	15⅛	.....	.....	.....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
58⅜	40¼	63½	54	$ 20	Cities Service	29,500	60⅞	*63½	60½	63½	+ 2⅜
95⅜	87	103	94½	100	do pfd	2,800	102⅜	*103	102⅜	103	+ ⅛
8⅞	7⅜	9⅝	8⅞	10	do pfd. B	500	9⅝	*9⅝	9⅝	9⅝	0
29¼	22½	30½	28¼	10	do banker's shares	100	30½	*30½	30½	30½	0
3⅞	1½	2¼	1⅛	1	Colombia Syndicate	98,500	1½	*2¼	1⅛	1⅛	+ ⅜
9¾	6⅜	8⅛	6½	10	Consolidated Royal	300	7½	*8⅛	7½	8½	+ 1
14⅞	9½	16¼	10	N.P.	Creole Syndicate	72,000	15½	16¼	15½	16	+ ¼
3	.50	1½	.76	N.P.	Crown Central	4,000	1⅛	1½	1⅛	1⅜	+ ¼
12	4	23	8⅛	N.P.	Darby Petroleum	5,000	22	23	21¼	22½	+ ½
11½	4	13½	7⅞	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	1⅞	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16¾	4	10	7½	N.P.	do pfd	200	10	10	10	10	0
3¾	1	2	1¼	N.P.	Gibson Oil	108,300	1½	2	1½	1⅜	+ ¼
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	130	101½	$ 25	Gulf Oil Corp	32,500	124¾	*130	124¼	126⅛	— ⅜
2½	.80	2¾	1½	10	Intercontinent Pet	9,000	2	2⅛	1⅞	2	0
2¼	1½	3	1¼	N.P.	Kirby Petroleum	6,300	1¾	*3	1¾	1⅞	+ ⅛
10⅞	5⅛	8⅛	5½	N.P.	Leonard Oil & Dev	20,600	8	*8⅛	7½	7⅝	— ⅛
27½	20	32⅜	20	N.P.	Lion Oil & Refg	18,700	26	*32⅜	26	31½	+ 5½
59⅜	37	57	49	$ 25	Lone Star Gas	8,800	49½	*57	49⅛	53	+ 4⅞
2⅞	.80	1⅞	.91	1	Magdalena Synd	139,600	1¾	1⅞	1⅜	1¾	0
21½	20⅞	22⅛	22¼	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	37⅝	N.P.	Margay Oil	300	42	44⅞	42	44⅞	+ 4⅜
3	1½	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	4¼	N.P.	Mexico-Ohio Oil	2,900	5	6⅛	4⅝	5½	+ ½
1½	1	1½	.90	$ 1	Mountain & Gulf	12,500	92	92	90	92	+ 1
29¼	22¾	28⅝	23¼	10	Mountain Producers	20,600	25⅛	25⅛	†23⅛	23⅛	— 1⅝
5⅞	4⅝	5⅝	4¾	5	New Bradford	66,500	5¼	5¼	5	5⅛	— ¼
6¼	4	5½	4	10	New England Fuel	100	4½	4½	4½	4½	+ ¼
16	9¼	11⅜	8¼	1	New Mex. & Ariz	600	10	10	9¼	9⅞	— ⅛
13⅞	9	15½	11½	25	New York Oil	100	15½	*15½	15½	15½	+ ½
12¾	9½	13	10¾	N.P.	North Cent. Texas	300	13	13	12½	12½	— ½
23⅞	21¼	.....	.....	.....	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2⅝	N.P.	Pandem	5,000	4	4⅛	3¾	3⅞	+ ⅛
12⅛	7	15¼	8½	N.P.	Panapec Oil	29,400	14¼	14¾	13⅜	14	— ⅜
9	7⅝	11⅜	10⅜	$ 25	Paragon Refg	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	5¼	$ 10	Pennok Oil	1,300	6⅞	7	6	6	— ⅞
...	...	4½	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	14½	9	25	Red Bank Oil	600	11	14½	13	13	+ 2
15½	3½	12⅞	4⅛	N.P.	Reiter-Foster	42,700	9	12⅞	8½	8⅞	— 2⅛
28⅜	15	31½	22	$ 25	Richfield Oil pfd	700	24	24	24	24	0
7	4½	9⅞	4⅝	N.P.	Ryan Consolidated	10,300	8	9⅞	6⅞	8	+ ⅛
8	5¼	7¾	6½	$ 10	Salt Creek Cons	2,000	6½	6¾	6¼	6¼	0
35½	27¼	35	28½	10	Salt Creek Prod	11,000	30½	30⅝	28⅜	28⅜	0
7	1¼	3½	1	5	Savoy Oil	100	2⅛	2⅛	2⅛	2⅛	— 1⅜
26½	17	22⅝	13	10	Tidal Osage	14,200	21⅜	*22⅞	21¼	22	+ ⅜
23¾	15	21¼	13⅛	10	do non-voting	9,200	20¼	21⅛	20¼	21⅛	+ ⅝
92	63½	87	82½	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
23¼	7	43	18	10	Venezuela-Mexico	600	42	43	41	43	+ 1
7⅜	4¼	6¼	4⅞	5	Venezuelan Petrol	9,000	5¾	6⅛	5¾	5⅞	+ ⅛
32⅝	19½	25	18⅞	N.P.	Wilcox Oil & Gas	2,400	22	25	21⅞	21⅞	— ⅛
8	4¾	8¼	5¾	$ 1	Woodley Petroleum	2,800	8¼	8¼	8⅛	8⅛	— ⅛
6	1¾	5	2⅛	25	Y Oil & Gas (new)	800	4½	4½	4	4¼	— ⅛

*New High †New Low xEx Dividend

THE OIL INDUSTRY EXCHANGE

Positions Wanted

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Securities Funding Corporation
Cadillac, Mich.

(*Continued from Page* 131)

industry referred to in the corporation's annual report for 1927 continued throughout the first quarter of 1928. Low prices for crude and refined products prevailed. Notwithstanding this condition, net operating income of Barnsdall Corp. for the first three months of this year compares favorably with the same period last year.

"Indications point to an improvement in conditions but, pending a definite change for the better, the directors have omitted the dividend for the first quarter, though the net current condition of the corporation has improved considerably."

Second quarter earnings, particularly of refining and marketing companies should be much better than first quarter earnings. Unless crude oil prices advance there is little likelihood that producing companies can show improvement.

Houston Gulf Gas Co. Issues Debentures

CLEVELAND, May 5.—Houston Gulf Gas Co. has issued $8,000,000 of 15-year 6½ per cent sinking fund debentures at 99 to yield 6.60 per cent.

Each $1000 debenture carries a non-detachable warrant for the purchase before April 1, 1930, of five shares of the company's common stock at $17.50 a share and at advancing rates in each succeeding two-year period until April 1, 1938. The maximum price set is $35 a share in the last period.

The debentures also are convertible into preferred stock after Jan. 1, 1931, unless called for redemption before that date.

This company late in April issued $11,000,000 of first mortgage bonds.

Financial Notes

Standard Oil Co. of California—All directors and officers re-elected.

Chesebrough Mfg. Co.—All directors and officers re-elected.

Tide Water Oil Co.—J. Noel Robinson elected a director. Other directors re-elected. Officers also were re-elected.

Atlantic Refining Co.—All directors and officers re-elected.

Vacuum Increases Dividend Payments

CLEVELAND, May 5.—Vacuum Oil Co. has declared its initial dividend on its new split stock. It is 75 cents a share. Before payment of the 100 per cent stock dividend April 28 the company paid 50 cents regular and 50 cents to $1 extra per share, payment the last three years having been $5 a year. The new rate of 75 cents a quarter on the new shares is equivalent to $1.50 a quarter or $6 a year on the old shares.

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Single Copies 10¢
Subscription rate $3.50 per yr.
in U.S.A. and Mexico (U.S. money)
$4 in Canada
$5 in foreign countries
Trade Mark reg.
U.S. Pat. Off.
Members of
Audit Bureau
of Circulations and
Associated Business Papers, Inc.

NATIONAL PETROLEUM NEWS

Branch Offices:
LOS ANGELES
Petroleum Securities Building
TULSA.
World Building
NEW YORK
342 Madison Avenue
HOUSTON
612 West Building
CHICAGO
35 Wacker Drive

Published by the National Petroleum Publishing Co., MAIN OFFICE · 1213 W. 3rd St., Cleveland, Ohio. Copyrighted 1928

Vol. XX Cleveland, Ohio, May 9, 1928 No. 19

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